



Riyadi Chamber of Commerce & Industry

# Construction Index



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First Ed.



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P.O.Box 1449 - RIYADH 11431 - SAUDI ARABIA  
TEL 4773115 - FAX 4770079 - TLX. 404291 SOGERB







**Supervised By:**

Riyadh Chamber of Commerce & Industry General  
Directorate of Contractors



**Prepared By:**  
PROJACS



**Designed & Directed By:**  
LASHEEN

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## FOREWORD...

المعرفة التجارية

give

The Chamber of Commerce awarded this Construction Cost Estimate to Saudi Projacs - one of the leading Program & Construction Managers in the Kingdom. Saudi Projacs in turn got a license from R. S. Means to use their item code, number and line items description, modification to line item description were adopted to meet Kingdom of Saudi Arabia needs.

The purpose of this book is to provide you, the Construction professional, with the most current and comprehensive construction cost data possible.

سأع  
المستفيد  
Whether you are a Contractor, an Owner, an Architect, an Engineer, a Facilities Manager, or anyone else who needs a quick construction cost estimate, you will find this publications to be a highly useful and necessary tool.

Today, with the constant flow of new construction methods and materials, it is difficult to find the time to look at and evaluate all the different construction cost possibilities. In addition, because labor and material costs keep changing, yesterday's cost information is not a reliable basis for today's estimate or budget.

مؤلف  
This book is keeping track of the costs for you along with a wide range of other key information. Data is collected and organized into a format that makes the prices information instantly accessible to you. From the preliminary budget to the detailed unit price estimate, you will find that the data in this book is useful for all phases of construction cost determination.

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# How the Book is Built.. An Overview..

## A Powerful Construction Tool

You have in your hands one of the most powerful construction tools available today for the building industry in the Kingdom of Saudi Arabia.

A successful project is built on the foundation of an accurate and dependable estimate. This book will enable you to construct just such an estimate.

For the casual user the book is designed to be: عادي

- Quickly and easily understood so you can get right to your estimate.
- Filled with valuable trades and items.

## For the regular user, the book is designed to be:

- Comprehensive, fully reliable source of current construction productivity rates, so you will be prepared to estimate any project.
- source book for differentiating between item alternatives productivity.

To meet all of these requirements we have organized the book into the following clearly defined sections:

### Quick Start:

This one-page section (see following page) can quickly get you started on your estimate.

### How to Use the Book: The Details

This section contains an in-depth explanation of how the book is arranged and how you can use it to determine a reliable construction productivity rate.

## Productivity Rate Section:

All data has been divided into the (16) divisions according to the Master Format system of classification and numbering as developed by the Construction Specifications Institute. For a listing of these divisions and an outline of their sub divisions, see the Unit Price Section Table of Contents.

Estimating tips are included at the beginning of each division.

## Metric Units:

The units of measure used in the construction trades and their symbols are listed.

## Abbreviations:

A listing of the abbreviations used throughout this book, along with the terms they represent, is included.

## The Scope of This Book:

This book is designed to be as comprehensive and as easy to use as possible. To that end we have made certain assumptions and limited its scope in two ways:

1. The materials prices are established based on a local average in a separate book.
2. The labor productivity are computed based on a local average rates.

For a more detailed explanation of how the cost data is developed, see "How To Use the Book: The Details".

## Project Size:

This book is aimed primarily at commercial and industrial projects.



## How the Book is Built.. Quick Start..

### Productivity Rate Section:

If you feel you are ready to use this book and don't think you need the detailed instructions that begin on the following page, this Quick Start section is for you.

These steps will allow you to get started estimating in a manner of minutes.

1- Find each cost data section you need in the Unit Price Section Table of Contents.

The cost data has been divided into (16) divisions according to the CSI Master Format.

2- Turn to the indicated section and locate the line item you need for your estimate.

3- Determine the total number of units your job will require. Note that the unit of measure for the material you're using is listed under "UNIT".

"Labor-hours and equipment-hours" allows to you to calculate the total labor-hours to complete that task. Just

multiply the quantity of work by this figure for an estimate of activity duration.

### Commonly Used Abbreviations

Saudi Projacs utilizes standard industry abbreviations. There is a complete glossary of abbreviations in the reference section. The following are a few of the most commonly used abbreviations you'll find in the book.

LM	Linear Meter
EA	Each
CUM	Cubic Meter
SQM	Square Meter
MET.TON	Metric Ton
GAL	Gallon
OPR	Operator

DIVISION 14: CONVEYING SYSTEMS							
CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
<b>141</b>	<b>DUMBWAITERS</b>						
<b>141 100</b>	<b>MANUAL DUMBWAITERS</b>						
<b>141 101</b>	<b>DUMBWAITERS:</b>						
141 101-0100	Manual dumbwaiter, 2 stops, average	EA	0.50 Elevator Foreman 4.00 Elevator Constructors 1.00 Steel Structure Worker 2.00 Elevator apprentice 3.00 Hand Tools 1.00 Chain Winch	2.000	2.000	2.000	16.000
141 101-0300	Manual dumbwaiter, for each stop, add	STOP	*	2.000	2.000	2.000	16.000
<b>141 200</b>	<b>ELECTRIC DUMBWAITERS</b>						
<b>141 201</b>	<b>DUMBWAITERS:</b>						
141 201-0010	Electric dumbwaiters, 2 stops, average	EA	0.50 Elevator Foreman 4.00 Elevator Constructors 1.00 Steel Structure Worker 2.00 Elevator apprentice 3.00 Hand Tools 1.00 Chain Winch	0.350	0.500	0.425	91.429
141 201-0600	Electric dumbwaiters, for each additional stop, add	STOP	*	1.500	2.000	1.750	21.333
<b>142</b>	<b>ELEVATORS</b>						
<b>142 010</b>	<b>ELEVATORS</b>						
<b>142 011</b>	<b>ELEVATORS</b>						

# How the Book is Built.. The Details..

## What's Behind the Numbers?

### The Development of Productivity Data

Just as in a schedule estimate, the work is divided into tasks or activities. A crew of labor and equipment is assigned to each task, a projection is made of the time, or duration required to complete the task.

### Required Task Information.

The detailed information required for task estimating is simply the description of resources required to perform the task and the duration or time needed to apply these resources:

### Basic Task Information

These data requirements are normally divided into three (3) categories:

- The crew and equipment to be used.
- The task productivity rate.
- The task labor and equipment hour required to complete the task.

### Crew Determination

The labor and equipment performing a task at a job site function as an integrated unit, and are simply termed crew or crew and equipment spread.

Crew productivity is a function of several factors including equipment productivity, the match between crew and equipment, experience of the team, nature of the work, and working conditions at the job site. There are basically two types of crew and equipment spread:

- 1) When the task is equipment intensive, the emphasis is on equipment selection. An scraper. A crew is then selected which can operate all of the equipment efficiently.
- 2) When the task is labor intensive, a crew is selected with skills that best match the task requirements. Equipment is secondary and may have such a low cost that it need not be included in the crew pricing.

For example, Ladders are seldom priced with painting crews.

### Crew Checklist

The checklist in figure (2) can be used as starting point for developing crews.





## Rounding of Costs

In general, all unit prices in excess of SR1.00 have been rounded to make them easier to use and still maintain adequate precision of the results. The rounding rules we have chosen are the following table.

Prices From . . .	Rounded in the nearest . . . .
SR. 01 to SR5.00	SR.01
SR5.01 to SR20.00	SR.05
SR20.01 to SR100.00	SR.50
SR100.01 to SR300.00	SR1.00
SR100.01 to SR1,000.00	SR5.00
SR300.01 to SR10,000.00	SR25.00
SR10,000.01 to SR50,5000.00	SR100.00
SR50,000.01 and above	SR500.00

### Crew Checklist

- What machines or operations require an operator?
- Is more than one operator required?
- What support is required for the operator, i.e., how many laborers or skilled tradesmen are required?
- Are there safely-related factors which required extra personnel?
- Does traffic control in a congested urban area required additional crew members?
- Do whether conditions require extra persons on the crew for curtain tasks? Concrete - placement in how weather usually requires extra finishers (considered in the average productivity).
- Finally, what does each person on the crew do and why is he there?

Figure 2



## Formals and Conventions:

Commas are not used when writing SI Metric numbers. Use spaces for inserting numbers over for digits (27 548).

Use a **0** before a decimal when writing a number less than one (0.275).

Leave space between a number and a symbol (81 kg, not 18 kg).

Do not use the plural of symbols (54 m, not 54 ms).

A center dot is used to indicate the product of two units (**N m**) rather than x or \* .

## Transition Guidelines:

For the convenience of the user during this transition period, the following conventions have been used.

- \* Gage (or gauge) remains the same (16 ga, 18 ga) for all products such as sheet metal and wire.
- \* Soft metric conversion of pipe sizes is followed by the inch dimension [3].
- \* Reinforcing bar size designations remain the same as the present ASTM Standard.
- \* The M after A615 indicates a metric specification. A615M reinforcing bars come in Grade 400, indicating 400 MPa yield strength.
- \* Structural steel members have been expressed in their nominal SI size, followed by their in-lb size (W 360 x 39 [W 14 x 26]).
- \* Concrete strengths have been expressed in nominal SI units (2500 psi - 20 MPa, 3500 psi = 25 MPa).
- \* Electrical conduit sizes have been expressed in nominal SI (mm) sizes, with the inch size following [3"].

# About the Metric Edition

## What is SI Metric?

SI (System International) Metric is the name given to the modern measurement system that has been adopted as a worldwide standard for the prepared system of weights and measures. In the SI Metric System, only one unit is used to describe a measured quantity. It is infinitely simple in that there are no conversions to remember (inches, feet, yards, fathoms, rods, chains, furlongs, miles, etc.) All quantities are derived using decimal arithmetic from the base units. The following is a list of SI Metric Base units used in this book.

### Base Units:

There are seven metric basic units of measurement, six of which are used in design and construction as follows:

Quantity or Measurement	SI Unit	Symbol
length	meter	m
mass (weight)	kilogram	kg
time	second	s
electric current	ampere	A
temperature	kelvin	K
luminous intensity	candela	cd

All other SI units are derived from these base units.

**Note:** In using symbols for SI Units, the use of the proper upper case or lower case letters is most important.

### SI Decimal Prefixes:

Factor	Prefix	Symbol
1 000 000 000 = $10^9$	giga	G
1 000 000 = $10^6$	mega	M
1 000 = $10^3$	kilo	k
100 = $10^2$	hecto	h
10 = $10^1$	deka	da
0.1 = $10^{-1}$	deci	d
0.01 = $10^{-2}$	centi	c
0.001 = $10^{-3}$	milli	m

The most commonly used SI prefixes in construction are kilo (k) and milli (m).

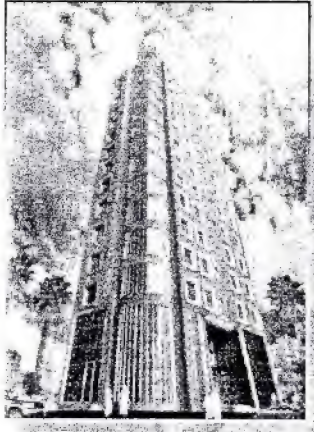
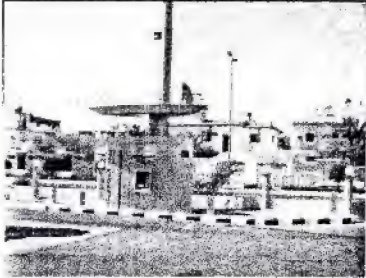


# Division 1

## General Requirements







مهندسين انضمامنا نحن ( أدوار التشييد ) إلى مجال المقاولات عام ١٩٩١م هدفنا وحرصنا على تقديم ما هو أفضل وما هو مميز في إدارة التصميم والإشراف وتقديم الاستشارات الهندسية لاختلاف أنواع المباني وتقديم الأفضل في عمليات الإدارة الهندسية للمشاريع الصغيرة منها والكبيرة بما يخدم شرف المهنة بأعلى مستوى من الخدمات الهندسية مع الالتزام والحفاظ على عاداتنا وتقاليدينا وترجمة تلك المفاهيم في عمل تصاميم هندسية تخدم الشعب السعودي ومتطلباته وتقرض طموحه وتطلعاته وهذه هي قمة أولوياتنا وأهدافنا السامية



مهندسين انضمامنا نحن ( أدوار - مهندسون استشاريون ) إلى مجال الاستشارات الهندسية عام ٢٠٠١م، هدفنا وحرصنا على تقديم ما هو أفضل وما هو مميز لعمليات التصميم والإشراف وتقديم الاستشارات الهندسية لاختلاف أنواع المباني وتقديم الأفضل في عمليات الإدارة الهندسية للمشاريع الصغيرة منها والكبيرة بما يخدم شرف المهنة بأعلى مستوى من الخدمات الهندسية مع الالتزام والحفاظ على عاداتنا وتقاليدينا وترجمة تلك المفاهيم في عمل تصاميم هندسية تخدم الشعب السعودي ومتطلباته وتقرض طموحه وتطلعاته وهذه هي قمة أولوياتنا وأهدافنا السامية



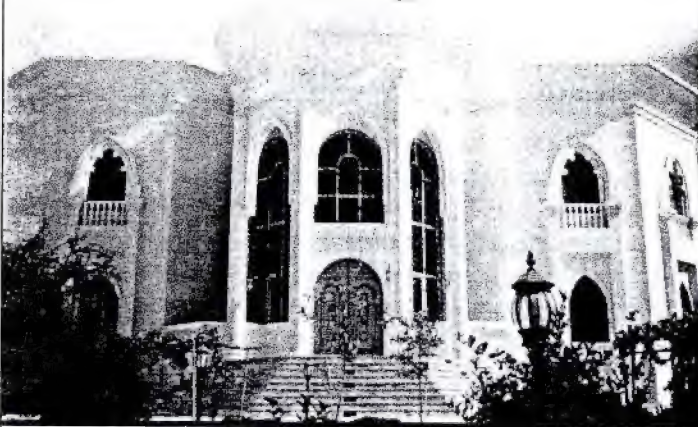
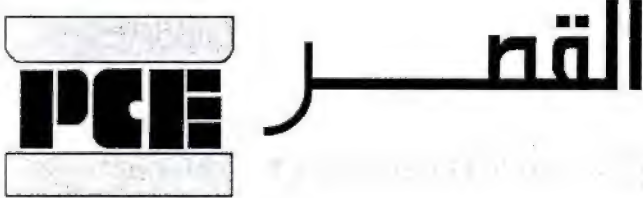


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نسعى لخدمتكم





## Division 1

# General Requirements

### Estimating Tips

While General Requirements items are not directly referred to on the plans, they are an inherent part of the construction process. A thorough review of the plans is required in order to determine the quantities associated with General Requirements items, both construction aids such as scaffolding and equipment needs, and administrative overhead.

Many of the items that comprise the General Requirements, such as scaffolding and the hookup and dismantling of temporary power, are not production-related and sometimes are mistaken as having no real cost. A review of the plan will help to identify and account for these items in the quantity take-off. Any experienced contractor can testify to the fact that there is a definite cost to the administration of a project.

### Overhead

Overhead costs are generally divided into *general overhead costs* and *job overhead costs*. The general costs include items that cannot be readily charged to any one project, while the job overhead costs include all items that can be readily charged to any one project and yet are not for materials or labour.

Depending on where the various costs are included, the cost of overhead can vary from (8%) to (30%) percent of the sum of materials, labour, and equipment. No one figure is correct, since the costs of running each office must be analyzed carefully to determine its overhead.

**General Overhead costs** are not readily chargeable to one particular project - they represent the cost of doing business and fixed expenses that must be paid by the contractor. The following should be included:

#### / Office:

Rent (if owned - the cost plus return on investment), electricity, heat, office supplies, postage, insurance (fire, theft, liability), taxes (property, water), telephone, and office machines and furnishings.

#### / Staff Salaries:

Office employees such as executives, accountants, estimators, purchasing agents, book-keepers, secretaries, and anyone else working in office.

#### / Miscellaneous:

Advertising, literature (magazines, books for library), legal fees, (not applicable to one particular project), professional services (architects, engineers, consultants), donations, travel (including company vehicles) and association dues.

**Job Overheads** also referred to as general conditions expense, job overhead comprises all costs that can be readily charged to a specific project. It includes the items of job expense that cannot be charged directly to a particular branch of work, but are required to construct the project. The list of job overhead items is placed on the first of the general estimate sheets under the heading of "Job Overhead" or "General Conditions".

Itemising each cost gives the estimator a basis for determining the amount of that expense and provides for comparison of projects. A percentage should not be added to the cost simply to cover this item. It is important that each portion of the estimate can be analyzed for accuracy to determine whether the estimator should bid an item higher or lower next time.

## Division 1

# General Requirements

**Staff Salaries:** This will include the salaries paid to the project superintendent, assistant superintendent, time-keeper, material clerk, all foremen required, and security, if needed. The cost must include all travelling expenses of these people.

The salaries of the various workers required are estimated per month, and that amount is multiplied by the estimated time it is expected that each will be required on the project.

### The Project Schedule

Drafting a schedule is a necessity, whether for a simple office building, residential or a complex multi-story tower hotel. Drafting and revising a schedule are the only means of determining both how long the project will last and what the time-sensitive General Requirements expenses will be.

### The Construction Manager and Other Field Staff

The contractor is advised to include a cost for the salary of the field construction manager to manage the project. Some projects require that the same construction manager be present from commencement to completion, to provide a sense of continuity. In that case there is little creativity involved in determining the cost. Additional field or office personnel may be indicated in the specifications. Expenses such as travel may be part of the cost of such personnel.

### Clean-up and Debris Removal

There are two basic classifications of clean-up-*general*, which is ongoing for the duration of the project, and *final* which entails the final cleaning of the premises prior to occupancy by the owners. The contractor must calculate the man-hours and resources needed to perform the general cleanup over the length of the project, including such costs as dumpster rental and removal, and storage of the dumpster in the street. It is important to note the associated costs of constructing and dismantling such items as ramps and chutes.

Final cleaning tends to be more specialized, requiring buffing and vacuuming equipment not usually considered part of the general contractor's typical work, and may be performed by a company normally provides these services.

## Division 1

# General Requirements

### Project closeout & Demobilization

Project closeout is bringing the project to final completion. It includes the submission of as-built drawings, warranties maintenance and operational instructions and literature; the removal of contractor equipment; and the punch list. All of these items represent a definite cost to the contractor and should be carried in the bid. These items tend to be manpower-intensive and should not be overlooked.

### Temporary Facilities

Temporary Facilities include costs such as those associated with a field office, particularly the expenses incurred in the set-up, removal, and rental of trailer. Also in this category are monthly expenses for equipment such as telephone, fax, copy machine, and blue-printing machine. The contractor must also calculate the cost of such services as temporary light and power, air conditioning, and water services for both the field office & the project itself.

This involve determining how long the field office will be needed, and at what point the permanent utilities will be available to the building. Other items classified as temporary facilities are portable toilets; temporary barricades; and pest control; staging and platforms; cranes and hoists; and project signs. The cost of most of these items is related to the amount of time needed and can be predicted by reviewing the schedule.

### Testing and Inspection

Many specifications require the testing and inspection of completed work. Testing often takes place in the field as the work is in progress. Soil and concrete testing are examples of such testing services. The cost of these services is commonly assumed by the contractor. The cost for the services can be calculated based on the frequency of inspection as indicated in the specs or as stipulated by code requirements.

### Submittals and Samples

Specifications often require that literature and samples be submitted for approved. Some contractors might think this is a redundant. This may be redundant, since the submittals are materials specified by the designer, but it is simply one item in a series that insure the project is built as designed. The contractor must take into account the cost of purchasing required samples.

### Permits and Fees

The category of permits and fees deals almost exclusively with the costs imposed by the local municipality. Included are such items as building permit; assessments for the connection of sewer; water, or storm drainage lines to main line.



## Division 1

# General Requirements

### Factors Affecting Productivity Output

#### **Weather Conditions:**

Several items of extra cost must be considered, including the cost of temporary enclosures and the cost of protecting equipment from weather elements.

Miscellaneous items that should be contemplated include the possibility of damaging adjacent buildings due to severe weather conditions such as heavy rain. Humidity is another element of weather that could force the work to be stopped.

#### **Nationality of Labour:**

Saudi Arabia has expatriates from over 100 different countries and its labour force have a vast variety of nationalities. Different nationalities produce different productivity rate depending on the nature of the work performed.

#### **Safety Conditions:**

Projects that comply with safety requirements make life easy for the labour force for a better production.

#### **Skilled Trade-Men:**

Skilled labour will provide good performance and increased productivity in a shorter time.

#### **Other Factors:**

The following construction related issues can effect on the productivity of different labour force:

- / Size and shape of construction.
- / Height of construction.
- / Area
- / Location
- / Type of construction.

**DIVISION 01 : GENERAL REQUIRMENTS:**

CSI CODE	ITEM DESCRIPTION	UNIT	QUNTITY	UNIT SALARY	% SALARY OVERHEA D	UNIT MATERIAL COST	UNIT LABOR COST	UNIT EQ. COST	TOTAL UNIT COST	TOTAL COST
<b>010 000</b>	<b>DIRECT OVERHEAD RUNNING COSTS:</b>									
<b>010100</b>	<b>DIRECT OVERHEAD COSTS:</b>									
<b>010 110</b>	<b>CONSTRUCTION STAFF AT SITE:</b>									
<b>010112</b>	<b>FIELD STAFF</b>									
010112-0100	Construction manager or superintendent, Unique & large jobs	Man Month		20,000	48.42%				29,683	-
010112-0200	Field Architect, Engineer, unique & large jobs	Man Month		18,000	49.24%				26,863	-
010112-0300	Field Civil Engineer, Unique & large jobs	Man Month		18,000	49.24%				26,863	-
010112-0400	Field Electrical Engineer, Unique & large jobs	Man Month		15,000	50.88%				22,631	-
010112-0500	Field Mechanical Engineer, Unique & large jobs	Man Month		15,000	50.88%				22,631	-
010112-0700	Field Quantity Surveyor	Man Month		5,000	50.17%				7,508	-
010112-0800	Field Surveyor	Man Month		3,500	52.65%				5,343	-
010112-0900	Guards	Man Month		550	107.80%				1,230	-
010112-1100	Laboratory Material Testing Engineer	Man Month		12,000	53.33%				18,400	-
010112-1200	Laboratory Technicians	Man Month		4,000	51.20%				6,048	-
010112-1300	Laboratory Laborer	Man Month		550	107.80%				1,230	-
010112-1800	Stores Manager	Man Month		2,000	61.35%				3,227	-
010112-1900	Store Keepers	Man Month		1,400	70.06%				2,381	-
010112-2000	Store Drivers	Man Month		1,200	74.90%				2,099	-
010112-2100	Workshop Manager	Man Month		8,000	46.12%				11,690	-
010112-2200	Workshop Mechanic	Man Month		3,500	52.65%				5,343	-
010112-2300	Workshop Drivers	Man Month		1,200	74.90%				2,099	-
<b>010114</b>	<b>PROJECT MANAGER:</b>									
010114-0100	PROJECT MANAGER LARGE OR UNIQUE PROJECTS	Man Month		25,000	46.94%				36,735	-
010114-0120	PROJECT MANAGER MEDIUM SIZE JOBS UP TO 100 M	Man Month		18,000	49.24%				26,863	-
010114-0140	PROJECT MANAGER, PROJECTS LESS THAN 50 M	Man Month		12,000	53.33%				18,400	-
010114-0160	Project Manager Secretary	Man Month		2,500	53.33%				3,932	-
<b>010116</b>	<b>PROJECT MANAGER SUPPORTING STAFF:</b>									
010116-0100	Accountant	Man Month		4,500	50.07%				6,753	-
010116-0200	Accountant Aid	Man Month		3,000	54.58%				4,638	-
010116-0300	Computer Operators	Man Month		3,500	52.65%				5,343	-
010116-0400	Claims Manager	Man Month		15,000	50.88%				22,631	-
010116-0500	Draftsman, shopdrawings	Man Month		2,500	57.29%				3,932	-
010116-0600	Drivers	Man Month		1,200	74.90%				2,099	-
010116-0700	Engineer, Architect, Shopdrawings & Materials Approval	Man Month		10,000	55.79%				15,579	-
010116-0800	Engineer, Civil, Shopdrawings & Materials Approval	Man Month		7,000	62.11%				11,348	-
010116-0900	Engineer, Electrical, Shopdrawings & Materials Approval	Man Month		7,000	62.11%				11,348	-
010116-1000	Engineer, Mechanical, Shopdrawings & Materials Approval	Man Month		7,000	62.11%				11,348	-
010116-1100	Engineer, Planning	Man Month		8,000	58.48%				12,758	-
010116-1200	Engineer, Structural, Shopdrawings & Materials Approval	Man Month		7,000	62.11%				11,348	-
010116-1300	Expediter	Man Month		2,000	61.35%				3,227	-
010116-1400	File Keeper	Man Month		1,500	68.13%				2,522	-
010116-1500	Office Service, Laborers	Man Month		350	107.80%				1,182	-
010116-1600	Procurement Manager	Man Month		3,000	54.58%				4,638	-
<b>010200</b>	<b>CONSULTANT/ OWNER OH EXPENSES:</b>									
<b>010221</b>	<b>CONSULTANT/OWNER REPRESENTATIVE OFFICES:</b>									
010221-0100	Office cleaning consumables	Man Month				10			10	-
010221-0200	Drinking water supplies including tea service	Man Month				22			22	-
010221-0400	Electrical Power Supply, on-site generation at 875 KWH per man month	Man Month							263	-
010221-0500	Equipment Maintenance, computers, copiers, printers, etc jobs more than 20 million SR	Month							200	-
010221-0600	General Water Supplies at 4.5 CUM per man month	Man Month							25	-
010221-0700	Offices Service laborers	Man Month		550	114.91%				1,182	-
010221-0800	Supplies, stationary, & computers supply	Month							700	-
010221-0900	Telephone & Fax bills- Local & in Kingdom Long distance calls Average	Month							2,000	-
<b>010224</b>	<b>CONSULTANT ACCOMODATION &amp; SERVICES:</b>									
010224-0100	Cars insurance, consultant staff	Car Month							125	-
010224-0200	Cars Insurance, Owner's representative, "If required"	Car Month							167	-



**DIVISION 01 : GENERAL REQUIRMENTS:**

CSI CODE	ITEM DESCRIPTION	UNIT	QUNTITY	UNIT SALARY	%SALARY OVERHEA D	UNIT MATERIAL COST	UNIT LABOR COST	UNIT EQ. COST	TOTAL UNIT COST	TOTAL COST
010224-0300	Cars Maintenance & fuel, Consultant staff	Car Month							300	-
010224-0400	Cars Maintenance & fuel,Owner's representative, "if required"	Car Month							400	-
<b>010300</b>	<b>CONTRACTOR SITE OVERHEAD EXPENSES:</b>									
<b>010310</b>	<b>CONTRACTOR OFFICES:</b>									
010310-0100	Office cleaning consumables	Man Month				12			12	-
010310-0200	Drinking water supplies	Man Month				20			20	-
010310-0400	Electrical Power Supply, on-site generation, at 625 KWH per man month	Man Month							188	-
010310-0500	Equipment Maintenance, computers, copiers, printers, etc. jobs more than 20 million SR.	Month							350	-
010310-0600	General Water Supplies, at 4.5 CUM per man month	Man Month							25	-
010310-0660	Offices Service laborers	Man Month		550	114.91%				1,182	-
010310-0700	Office Supplies, stationery & computers supply	Month							1,500	-
010310-0800	Office, Engineering Drawings supply	Month							1,000	-
010310-0900	Office telephone & Fax bills- Local & Long distance calls Average	Month							3,000	-
010310-1000	Office, travel expenses from site to main office, if applicable cost depends on site location and class of travel. Assume an average of 2 trips monthly	Trip								
<b>010340</b>	<b>CONTRACTOR STAFF ACCOMODATION :</b>									
010340-0100	Cars Insurance, contractor staff	Car Month							125	-
010340-0200	Cars Maintenance & fuel, Contractor staff	Car Month							350	-
010340-0300	Consumables, housekeeping for all campuses, Average	Man Month							7	-
010340-0400	Cooks for all contractor campuses	Man Month		3,500	52.65%				5,343	-
010340-0500	Cook assistants	Man Month		750	95.21%				1,464	-
010340-0600	Drinking water, contractor campuses	Man Month				24			24	-
010340-1100	Labor transportation from off-site labor campuses to site within 50 KM trip distance	Man Month	6,480.00	13	74.90%		23	5	28	182,412
010340-1200	Water Supply city connected, per person, Monthly, at 8 CUM per person	Man Month							44	-
010340-1300	Water supply per person, on-site delivery, Monthly	Man Month							67	-
<b>010400</b>	<b>ENVIROMENTAL &amp; SAFETY MEASURES EXPENSES:</b>									
010400-0100	Ambulance insurance	Month							250	-
010400-0200	Ambulance maintenance & fuel	Month							300	-
010400-0300	Doctor, "general practice" in remote sites	Man Month		9,000	45.56%				13,100	-
010400-0400	First aid expenses average	Man Month							15	-
010400-0500	Medicine consumables for remote sites	Man Month							35	-
010400-0600	Sewer, Septic tank(s) contents removal, all campuses & construction area pits. Assumed 0.15 cum daily per person.	Man Month							35	-
010400-0700	Progressive site clean-up, Based on site area, assume monthly at 0.026 Hour/SQM. Consider actual cleaning area equals to uncovered site area.	Month Sqm					0	0	0	-
<b>010420</b>	<b>INSURANCE</b>									
						<b>Contract Values</b>				
010420-0100	Builders all risk type insurance, percent of contract value	% Job Value	0.250%			45,000,000			45,000,000	112,500
010420-0200	Builders equipment insurance, percent of total on-site equip. value	% Eq Value	0.650%			45,000,000			45,000,000	292,500
010420-0300	Builders risk standard insurance, percent of contract value	% Job Value	0.150%			45,000,000			45,000,000	67,500
010420-0400	Employees Medical insurance, See Manpower OH costs Div. 010058	Man Year								-
010420-0500	Employees social security insurance, See manpower OH costs Div. 010058	Man Month								-
<b>010440</b>	<b>JOB CONDITIONS &amp; PRICE ESCALATION:</b>									
010440-0100	Escalation to mid - point of construction for jobs over than 2 years, consider 1.5 % annually of the total direct cost every extra year	% -years	1.500%							
010440-0200	Labor shortage at site location, add 10 % to labor cost value	Percent	10.000%							
010440-0300	Restricted sites to reach, lack of working space add 3 % of labor & material cost value	Percent	3.000%							
010440-0400	Shortage of subcontractors at site location, add 10 % on specific subcontracts.	Percent	5.000%							
<b>010500</b>	<b>GENERAL OVERHEAD COSTS:</b>									
<b>010520</b>	<b>MARK - UP:</b>									
010520-0200	Overtime work to complete job within assigned construction period required. To compute month rate Use corresponding % from table to multiply by labor & equip cost. Example: 30 months contract time, 36 completion needed time, 20,000 labor & equip	Month Percent	0.32				14,000,000	6,000,000	20,000,000	6,432,000

**DIVISION 01 : GENERAL REQUIRMENTS:**

CSI CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT SALARY	% SALARY OVERHEAD	UNIT MATERIAL COST	UNIT LABOR COST	UNIT EQ. COST	TOTAL UNIT COST	TOTAL COST
TABLE FOR CALCULATION OF OVERTIME										
COMPLETION TIME		CONTRACT TIME	MONTHS OVERTIME	%	TOTAL %					
		24	20	4.00	7.50%	0.2				
		36	30	6.00	0.05	0.3216				
		40	36	4.00	4.17%	0.1665				
		45	40	5.00	3.75%	0.1875				
<b>010560 OVERHEAD COSTS LABOR:</b>										
010560-0100	Engineer average wage, overhead costs, housing not included, percent of Basic Salary	%	40.800%							
010560-0200	Laborer overhead costs, housing not included, percent of laborers Basic Wages	%	68.000%							
010560-0300	Skilled Laborer average overhead costs, housing not included, percent of Basic Wages	%	44.450%							
010560-0400	Special Skilled worker overhead costs, housing not included, percent Of Basic Wages	%	38.350%							
010560-0500	For staff & labor Housing See DIV. 015									
<b>010570 GEN. CONTRACTOR OVERHEAD ON SUBCONT. PRICE:</b>										
010570-1000	Overhead on subcontractors price	%	15.000%				5,000,000		5,000,000	750,000
<b>010580 UNSEEN EXPENSES:</b>										
010580-0100	Site unseen overhead expenses such as mail, express mail, E-mail, work delays	%	3.000%			45,000,000			45,000,000	1,350,000
<b>010590 PROFIT: Depending on Project size</b>										
010590-0100	General contractor profit on subcontractors prices	%	10.000%			5,000,000			5,000,000	500,000
010590-0200	General contractor profit Minimum of project total	%	10.000%			40,000,000			40,000,000	4,000,000
010590-0300	General contractor profit Average of project total	%	15.000%			40,000,000			40,000,000	6,000,000
010590-0400	General contractor profit Maximum of project total	%	20.000%			40,000,000			40,000,000	8,000,000
<b>010600 BONDS &amp; GUARANTEES:</b>										
<b>010620 PERFORMANCE BONDS: ASSUME 1.25% OF JOB DIRECT COST FOR FINANCING CHARGES &amp; GUARANTEES</b>										
010620-0100	Bid Bond, at 0.0001 of contract value monthly. Example: job value 45 million & bond duration for 6 months									
010620-0200	Financing charges, at 0.015% percent per month for every allowed one million overdraft. Example: contractor overdraft 4.5 million construction period 30 months, finance charges will be									
010620-0220	Financing charges, material letter of credits, at 0.9 % of contract value									
010620-0400	Performance bond									
<b>010640 GUARANTEES:</b>										
010640-0300	Final handover guarantee bond, percent of bond value									
<b>010700 PERMITS &amp; UTILITY FEES &amp; TAXES:</b>										
<b>010720 PERMITS:</b>										
010720-0100	City permit fees if applicable	SQM								
<b>010740 UTILITY CONNECTION FEES:</b>										
010070-0200	Electrical connection fees if applicable	KVA						150	150	-
010070-0220	For high voltage SCECO installed equipment, " If Applicable" Add	KVA				1,000			1,000	-
010070-0300	Water & sewer connection fees if applicable	CUM								
<b>010760 TAXES:</b>										
010760-0100	Taxes for foreign contractors Percent of Contract Value	Percent	11.250%			45,000,000			45,000,000	5,062,500
010760-0200	Taxes for joint ventures Percent of Contract Value pending JV structure Example 60% foreign, 40% local	Percent	6.750%			45,000,000			45,000,000	3,037,500
010760-0300	Zakat for local contractors; See DIV. 010046 Main Office Overhead					45,000,000			45,000,000	675,000
<b>010800 SUBMITTALS, PHOTOGRAPHS:</b>										
<b>010820 SUBMITTALS:</b>										
010820-0100	Shop drawings & material Submittals, See Div. 010116									
010820-0200	Site area survey; if required, at 150 sq per 1000 sqm of site area	SQM								
010820-0300	Site soil testing, if required, See also DIV. 020120 - Site works	Bore								
010820-0400	Site topography survey & property line survey	SQM						0.65	0.65	
<b>010840 PHOTOGRAPHS</b>										
010840-0500	Progress photographs 10 shots, 4 prints size 200x250 mm, average	Month						800	800	-
010840-0600	Video if requested	Month						300	300	-
<b>010900 QUALITY CONTROL:</b>										



**DIVISION 01 : GENERAL REQUIREMENTS:**

CSI CODE	ITEM DESCRIPTION	UNIT	QUNTITY	UNIT SALARY	% SALARY OVERHEAD	UNIT MATERIAL COST	UNIT LABOR COST	UNIT EQ. COST	TOTAL UNIT COST	TOTAL COST
010905	<b>SITE MANAGMENT:</b>									
010905-0100	Construction management, other than contractor staff if required. In this case, contractor management staff Div. 010112 shall be adjusted accordingly Minimum 5% of contract value	Percent	5.000%			175,000,000			175,000,000	8,750,000
010905-0120	Construction management, other than contractor staff if required. In this case, contractor management staff Div. 010112 shall be adjusted accordingly Maximum 7% of contract value	Percent	7.000%			45,000,000			45,000,000	3,150,000
010905-0100	Contractor Management Staff, See DIV. 010112									
010905-0300	project planning management, if outside contractor staff at 0.075 % of contract value	Percent Month	0.075%			45,000,000			45,000,000	39,750
010925	<b>TESTING:</b>									
010925-0200	Sample testing at site, See DIV. 010112									
010925-0220	Average sample testing, building trades at site and in outside laboratory, at 0.55 % of contract value	Percent	0.550%			45,000,000			45,000,000	247,500
010925-0300	Sample testing Outside Laboratory within city limits Average building materials.	Test					350		350	-
010925-0300	Sample testing Outside Laboratory within city limits Average soil testing materials	Test					400		400	-
010945	<b>FACTORY INSPECTION &amp; TESTING , OUTSIDE KINGDOM:</b>									
010945-0400	Consultant/owner, attending factory test, outside Kingdom, priced according to number of visits & country of destination Example Owner Repr., Engineer & contractor representative for 5 days to USA, first class travel. Assume for this trip 15 day trip	Day Trip	15.00			5,000			6,000	90,000
010945-0500	Foreign expertise testing, coming from outside the kingdom, including residency & travel. Example: From USA, travel J class, for 3 days visit, assume travel time days.	Day Trip	3.00			13,008			13,008	39,024
010965	<b>FACTORY INSPECTION &amp; TESTING , IN KINGDOM:</b>									
			0.06							
011100	<b>INDIRECT RUNNING OVERHEAD EXPENSES:</b>									
011205	<b>CONTRACTOR MAIN OFFICE OH EXPENSES:</b>									
011205-0100	Accounting/Legal & data processing, average percent of annual TO	% Of TO	0.85%							
011205-0200	Care for staff, maintenance, fuel & insurance, average percent of annual TO	% Of TO	0.30%							
011205-0300	Engineering & planning department, Salaries, percent of annual TO	% Of TO	2.50%							
011205-0400	Estimation department, Salaries, average percent of annual TO	% Of TO	0.50%							
011205-0500	General Manager Office Salaries, minimum 3000000 SR	% Of TO								
011205-0520	General Manager Office Salaries, maximum 750000 SR.	% Of TO								
011205-0600	Procurement department, Salaries, average percent of annual TO	% Of TO	0.50%							
011205-0700	Publicity expenses, minimum 50000 SR	LOT								
011205-0720	Publicity expenses, maximum 200000 SR	LOT								
011205-0800	Recruitment & iqama expenses, staff.	% Of TO	0.05%							
011205-0900	Rental & utilities, main office, minimum 150000 SR.	% Of TO								
011205-0920	Rental & utilities, main office, minimum 750000 SR.	% Of TO	750,000							
011205-1000	Staff medical insurance, average percent of annual TO	% Of TO	0.40%							
011205-1100	Staff incentives & profit Sharing, average percent of annual TO	% Of TO	0.70%							
011205-1200	Telephone, Fax & telex bills, average percent of annual TO	% Of TO	0.25%							
011205-1300	Travel Expenses, staff, average percent of annual TO	% Of TO	0.35%							
011205-1400	Zakat expenses, average percent of annual TO	% Of TO	0.02%							
011205-1500	Rule of thumb & using above %, main office expenses for less than 6M SR annual turnover	% Of TO	15.50%							
011205-1600	Rule of thumb & using above %, main office expenses from 6M To 10M SR annual turnover	% Of TO	12.55%							
011205-1700	Rule of thumb & using above %, main office expenses from 15M to 30M SR annual turnover	% Of TO	8.90%							
011205-1800	Rule of thumb & using above %, main office expenses from 35M to 50M SR annual TO	% Of TO	8.00%							
011205-1900	Rule of thumb & using above %, main office expenses from 65M to 80M SR annual TO	% Of TO	7.50%							
011205-2000	Rule of thumb & using above %, main office expenses over 85M SR annual turnover	% Of TO	7.25%							
015	<b>MOBILIZATION</b>									
015100	<b>CARS:</b>									
01500-0100	Consultant cars, deluxe, Depreciated cost, 5 years, Example for 30 month construction period.	Man Car Month						30,000	30,000	-
01500-0300	Contractor cars, deluxe, Depreciated cost, 5 years	Man Car Month						30,000	30,000	-
01500-0400	Contractor cars, Medium, Depreciated cost, 5 years.	Man Car Month						22,500	22,500	-

**DIVISION 01 : GENERAL REQUIREMENTS:**

CSI CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT SALARY	% SALARY OVERHEAD	UNIT MATERIAL COST	UNIT LABOR COST	UNIT EQ. COST	TOTAL UNIT COST	TOTAL COST
01500-0900	Contractor cars, Small, Depreciated cost, 5 years	Man Car Month						15,000	15,000	-
01500-0600	Contractor workshop & plants cars, Pick-up, Depreciated cost, 5 years	Man Car Month						26,250	26,250	-
<b>015200 TEMPORARY CONSTRUCTIONS:</b>										
<b>015205 ACCESS ROAD &amp; RAMPS:</b>										
015200-0200	Access road, including clearing, 100 mm compaction & 200 mm fill	SQM					2	4	5	-
015200-0300	Access road, including clearing, 100 mm compaction & 200 mm selected fill	SQM				6	2	4	11	-
015200-0400	Access road, including clearing, 100 mm compaction & 200 mm fill with 1.5 kg prime asphalt coat & 0.25 kg/m <sup>2</sup> asphalt tack coat	SQM				9	2	4	15	-
015200-0500	Access road, including clearing, 100 mm compaction & 200 mm fill with 1.5 kg prime asphalt coat, 0.25 kg/m <sup>2</sup> asphalt tack coat & 50 mm asphalt	SQM				40	3	5	48	-
015200-0600	Access road, periodic maintenance	Month SQM				2	1	2	5	-
015200-0700	Dirt surface parking, including clearing & 200 mm fill layer	Car							300	-
015200-0800	Dirt, surface parking periodic maintenance	Month Car							252	-
015200-0900	Sheltered dirt parking space	Car							2,300	-
015200-1000	Sheltered asphalt parking space	Car							2,660	-
015200-1100	Access ramp, concrete	SQM							60	-
015200-1200	Access ramp, gravel fill, 100 mm deep	SQM							8	-
<b>015210 CONSULTING/OWNER ENGINEER SITE OFFICES:</b>										
015210-0100	Offices, Masonry & concrete deck, based on 15 SQM per person of the staff, including meeting rooms & office support area, 20 % material salvage value	Man Month				258	94		352	-
015210-0200	Offices, Masonry & corrugated deck, based on 15 SQM per person of the staff, including meeting rooms & office support area, 25 % material salvage value	Man Month				219	73		292	-
015210-0300	Offices, Prefabricated units, 15 SQM per person including meeting rooms, offices & support areas. Depreciated at 60 months	Man Month				200	21	5	226	-
015210-0400	Office computer network, Depreciated cost at 36 months, Monthly	Month station				135	6	0	140	-
015210-0500	Office equipment, Copiers, typewriters, etc., Depreciated cost at 36 months, Monthly	Month				1,667	1	1	1,668	-
015210-0600	Office software, depreciated cost at 36 months	Month							1,250	-
015210-0700	Office standard furniture per person, Depreciated cost at 36 months, Monthly	Man Month				42	1	0	43	-
<b>015215 CONSTRUCTION WORKSHOPS &amp; PLANT DEPRECIATED COST AT 36 MONTHS</b>										
015215-0100	Equipment maintenance workshop, minimum of 16 SQM for jobs up to 10MSR, including tools, maint. equipment & employees facilities	Month				142	56	135	333	-
015215-0200	Equipment maintenance workshop, 1 SQM/1MSR for jobs 15MSR to 50 MSR, including tools, maintenance equipment & employees facilities. Example for project of 45 MSR & 35 months constr.	Month SQM MS	1,620.00			10	4	18	31	50,703
015215-0300	Equipment maintenance workshop, 0.75 SQM/1MSR for jobs 65MSR to 85 MSR, including tools, maintenance equipment & employees facilities. Example for project of 72 MSR	Month SQM MSR				10	4	18	31	-
015215-0400	Equipment maintenance workshop, 0.65 SQM/1MSR for job over 100 MSR including tools, maintenance equipment & employees facilities, Example contract value 225 MSR	Month SQM MSR				10	4	18	31	-
015215-0500	Concrete Batching plant, remote sites, Assume 0.025 SQM per GSQM of build-up area. Eq. cost depreciated for 72 months	Month SQM MS	67,500			1	0	6	7	498,825
015215-0600	Construction workshop, for emergency generators at 20 sqm, generators shelter included with generators depreciated at 36 months	Month SQM	20			4	3	73	80	1,603
015215-0700	Joinery & steel workshop, minimum 40 m <sup>2</sup> , or 1.5 m <sup>2</sup> per 1000 m <sup>2</sup> build up area, plus 60 m <sup>2</sup> open area. Example For 36 months construction period	Month SQM GS	1,440			4	3	10	18	25,397
015215-0800	Masonry Plant For Remote sites, 0.05 sqm open area per GSQM of build-up area. Example: A project of 75,000 m <sup>2</sup> will require 3750 m <sup>2</sup> of open area & closed area. Eq. cost depreciated for 72 months	Month SQM GS	135,000			1	0	3	5	628,425
015215-0900	Duct workshop, minimum 20 m <sup>2</sup> , or 1 m <sup>2</sup> per 1000 m <sup>2</sup> build up area, plus 60 m <sup>2</sup> open area	Month SQM GSQM				6	1	17	23	-
<b>015220 CONTRACTOR CAMPUSES ON-SITE/OF-SITE</b>										
015220-0100	On-site labor camp, 6 SQM per person, including support area, masonry and concrete deck, depreciated at 36 months with 20% salvage value on material	Man Month				94	31		125	-
015220-0200	On-site labor camp, 6 SQM per person, including support area, masonry and corrugated deck, depreciated at 36 months with 25 % salvage value on material	Man Month				75				-
015220-0300	On-site labor camp, 8 SQM per person, including support area, prefabricated units, including support area. Depreciated at 60 months Monthly	Man Month				107	7	1	115	-
015220-0400	Labor camp furniture, depreciated cost at 36 months, Monthly	Man Month				21	0	0	21	-



**DIVISION 01 : GENERAL REQUIREMENTS:**

CSI CODE	ITEM DESCRIPTION	UNIT	QUNTITY	UNIT SALARY	% SALARY OVERHEAD	UNIT MATERIAL COST	UNIT LABOR COST	UNIT EQ. COST	TOTAL UNIT COST	TOTAL COST
015220-0500	On-site skilled labor camp, 8 SQM per person, including support area, masonry and concrete deck, depreciated at 36 months with 20% salvage value on material.	Man Month				124	50		174	-
015220-0600	On-site skilled labor camp, 8 SQM per person, including support area, masonry and corrugated deck, depreciated at 36 months with 25% salvage value on material.	Man Month				100	39		139	-
015220-0700	On-site skilled labor camp, 10 SQM per person, including support area, prefabricated units, including support area. Depreciated at 60 months. Monthly.	Man Month				133	8	2	143	-
015220-0800	Skilled labor camp furniture, depreciated at 36 months, Monthly.	Man Month				25	0	0	25	-
015220-0900	On-site staff camp, 14 SQM per person, including support area, kitchen, dining bath, sitting, Masonry and concrete deck, depreciated at 36 months with 20% salvage value on material.	Man Month				229	88		316	-
015220-1000	On-site staff camp, 14 SQM per person, including support area, masonry and corrugated deck, depreciated at 36 months with 25 % salvage value on material.	Man Month				190	66		256	-
015220-1100	On-site staff camp, 18 SQM per person, including support area, prefabricated units, including support area. Depreciated cost, Monthly.	Man Month				240	15	3	256	-
015220-1200	Staff camp furniture, depreciated cost, Monthly.	Man Month				36	0	0	36	-
015220-13400	On-site senior staff camp, 28 SQM per person, including support area, masonry and concrete deck, depreciated at 36 months with 20% salvage value on material.	Man Month				482	175		657	-
015220-1400	On-site senior staff camp, 28 SQM per person, including support area, masonry and corrugated deck, depreciated at 36 months with 25% salvage value on material.	Man Month				408	136		544	-
015220-1500	On-site senior staff camp, 30 SQM per person, including support area, prefabricated units, including support area. Depreciated cost, Monthly.	Man Month				400	25	5	430	-
015220-1600	Staff camp furniture, depreciated cost, Monthly.	Man Month				42	0	0	42	-
015220-1700	Off-site labor campus, for land rent see DIV. 010340									
015220-1800	For utilities installation to Contractor housing campus See DIV. 015290									
015220-1900	For Running overhead Expenses, Contractor housing campus See DIV. 010340									
<b>015225 CONTRACTOR CAMPUS SUPPORTING FACILITIES:</b>										
015225-0100	General public toilets over the site, 0.15 SQM per person, including pit. Example site with 800 persons for 36 months construction period.	Man Month	26,800.00			2	1		3	80,928
015225-0200	Health care facility for remote sites, masonry walls & concrete deck average 40 m2, including utilities & furnished, depreciated cost at 36 months.	Month SQM	1,440			23	6	8	36	54,490
015225-0300	Pray area "mosque", open sheltered, average 0.5 SQM per person, at 40% prayers, including utilities Example for 400 persons site, 36 months.	Man Month	14,400		1440	4	1	0	5	68,270
015225-0400	Recreation area, covered, sports playground, 0.06 SQM/person. Example: For over 500 labors campuses & 36 months construction.	Man Month	16,000	64		1	1	0	2	35,260
015225-0500	Recreation area, open, sports playground, 0.25 SQM/person. Example: For over 500 labors campuses & 36 months construction.	Man Month	16,000	15		0	0	0	1	9,774
015225-0600	Storage, covered, Cement storage area, minimum of 100 SQM for jobs less than 50 M SR. Example: For 36 months Construction period.	Month SQM	3,600			8	2		10	34,499
015225-0620	Storage, covered, Cement storage area, minimum of 200 SQM for jobs more than 55 MSR & less than 80 M SR.	Month SQM				8	2		10	-
015225-0640	Storage, covered, Cement storage area, minimum of 300 SQM for jobs more than 100 MSR.	Month SQM				8	2		9.58	-
015225-0700	Storage area, covered, minimum of 30 SQM for jobs less than 10 M SR.	Month SQM				8	2		10.55	-
015225-0720	Storage area, covered, average of 1 SQM /1 M SR for jobs Up to 100 M SR.	Month SQM MSR				8	2		10.55	-
015225-0740	Storage area, covered, average of 0.85 SQM /1 M SR for jobs over 125 M SR.	Month SQM MSR				7	2		8.97	-
015225-0900	Storage laydown open Area; Fenced, 100 SQM minimum for jobs less than 10 M SR. Material cost depreciated.	Month SQM	3,600			1	0		0.94	3,384
015225-1000	Storage laydown open Area; Fenced, 10 SQM/1 MSR for jobs up to 100 MSR.	Month SQM MSR				1	0		0.94	-
015225-1100	Storage laydown open Area; Fenced, 8 SQM/1 MSR for jobs over 125 MSR.	Month SQM MSR				1	0		0.94	-
015225-1200	Storage, Special, Covered, For jobs over 100 MSR, or specialty jobs, average 0.40 M2/MSR Example for 125 million project at 36 months construction period quantity will be	Month SQM MS	1,800						0.94	
015225-1220	Storage, Special for furniture, Covered, For specialty jobs, Furnished, average 2.00 SQM/1 MSR.	Month SQM MSR							0.94	-
015225-1300	Stores offices, average of 0.15 SQM /1 MSR, jobs up to 100 MSR, furnished.	Month SQM MSR				14	5		18	-

**DIVISION 01 : GENERAL REQUIREMENTS:**

CSI CODE	ITEM DESCRIPTION	UNIT	QUNTY	UNIT SALARY	% SALARY OVERHEAD	UNIT MATERIAL COST	UNIT LABOR COST	UNIT EQ. COST	TOTAL UNIT COST	TOTAL COST
<b>015230</b>	<b>CONTRACTOR SITE OFFICES:</b>									
015230-0100	Offices based on 15 SQM per person of the staff, including meeting rooms & office support area. Masonry & concrete Deck	Man Month				255	94		352	-
015230-0200	Offices based on 15 SQM per person of the staff, including meeting rooms & office support area. Masonry & corrugated Deck	Man Month				215	73		292	-
015230-0300	Offices, Prefabricated units, 12 SQM per person including meeting rooms & offices support areas. Depreciated cost, monthly	Man Month				267	35	8	310	-
015230-0400	Office computer network. Depreciated cost, Monthly	Month/station				135	6	0	140	-
015230-0500	Office equipment. Copiers, Drawing copiers...etc, Depreciated cost, Monthly	Month				2,750	4	1	3,755	-
015230-0600	Office software	Month							#REF!	#REF!
015230-0700	Office standard furniture per person. Depreciated cost, Monthly	Month/person				33	0	0	34	-
<b>015235</b>	<b>FENCING:</b>									
015235-0100	Barricades, barrel, reflectorized	EA							200	-
015235-0200	Barricades, barrel, with flashers	EA							325	-
015235-0300	Barricades, barrel, with Steady burn light	EA							350	-
015235-0400	Fence, wood and corrugated steel, 2 meters high, Quantity based on lot size 25% salvage material cost. Example: For a site lot area 40,000 SQM, Perimeter Fence Approx.	LM	1,000			30	10		40	40,000
015235-0500	Fence, chain link including steel angles, 2 meters high, 25 % salvage on material cost. Quantity based on lot size. Same Example Line 015235-0400	LM	1,000			45	15		60	60,000
015235-0600	Fence gate, 6m wide	EA							1,500	-
015235-0700	Fence gate, 1m wide	EA							450	-
015235-0800	Fence vehicle gate, with 2 manual arm reflectorized barrier	EA							2,000	-
015235-0900	Guard house, Kiosk, masonry block	SQM				10	4		14	-
<b>015240</b>	<b>NOTICE BOARDS &amp; SIGNS:</b>									
015240-0100	Project Main Sign, approx. 3m x 2 m. Assume at least 3 signs per site unless shown otherwise.	EA							4,200	-
015240-0200	Direction & notice signs. Quantity depends on project land size. Assume as minimum requirement 5 signs, or assume 1 sign each 10000 SQM for large lot area sites. Material salvage value 25 %	EA							40	-
015240-0300	Traffic signs. Quantity depends on project land size, Assume minimum of 6 signs or 1 sign every 5000 m2 uncovered area of the site lot area, material salvage value 25%.	EA							69	-
015240-0400	Warning signs, Quantity depends on project size. Assume 1 sign every 1000 m2 of build up area and temporary facilities areas. Assume also 1 sign every	EA							125	-
<b>015250</b>	<b>SITE CLEANING</b>									
015250-0100	Cleaning & leveling mobilization site, per SQM of mobilization camp area	SQM							2	-
<b>015260</b>	<b>SITE SECURITY MEASURES:</b>									
015260-0100	Fire extinguishers, stores, offices, campuses & construction area, depends on project size. Assume minimum of 1 every 500 SQM area	EA							225	-
015260-0200	Water Tanker for fire fighting, including operation & maintenance.	Month							6,000	-
015260-0300	Sand buckets, construction area. Depends on project size.	EA							75	-
015260-0400	Security guards, depends on project size, minimum of 3 per site, included in section 010112, Field Staff.	Man Month		550	123.59%				-	-
<b>015300</b>	<b>TEMPORARY UTILITIES:</b>									
015300-0100	Temporary emergency generators depends on site power consumption needs. Assume 0.75 KW per person, To cover all site temporary facilities loads & spare power, depreciated monthly. Example a site of 800 persons, for 30 months construction period requires	Man Month/ KW	15,000			15	20	2	38	-
015300-0200	Temporary electrical distribution, depends on site area & distributed power based on 0.75 KW per Person. For site areas less than 100,000 SQM, 30 % Material salvage value. For same Example Line 015300-0100	Man KW	600			315	100		415	-
015300-0220	Temporary electrical distribution, depends on site area & distributed power based on 0.75 KW per Person. For site areas more than 100,000 m2 & less than 300,000 m2. Material cost depreciated. For same Example Line 015300-0100	Man KW	600			455	150		605	-
015300-0240	Temporary electrical distribution, depends on site area & distributed power based on 0.75 KW per Person. For site areas more than 400,000 m2. Material cost depreciated. For same Example Line 015300-0100	Man KW	600			578	180		758	-
015300-0300	Temporary septic tank, per person of manpower (MP) force, assume 0.1 Cum per person. Capacity based on 15 days storage. Example for 400 persons tank capacity for 15 days will be 60m3.	CUM Person	600			160	30		190	-
015300-0400	Temporary sewer lines, per CUM Discharge, and mobilization camp site, for campuses area site up to 5000 m2 & 200 persons approx.	CUM Person	300						950	-



**DIVISION 01 - GENERAL REQUIREMENTS:**

CSI CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT SALARY	% SALARY OVERHEAD	UNIT MATERIAL COST	UNIT LABOR COST	UNIT EQ. COST	TOTAL UNIT COST	TOTAL COST
015300-0420	Temporary sewer lines, per CUM Discharge and mobilization camp site, for campuses area site more than 5000 m2 & as example 500 persons approx.	CUM Person	750						521	
015300-0500	Temporary water storage tanks for Campus assume 0.15 Cum per day per person of MP force, for 2 days storage. Example for 300 person campuses	CUM Person	90			265	70	20	355	
015300-0600	Temporary water lines, per CUM of Distributed water and mobilization campuses site area. Example for site area up to 5000 m2 & 200 persons.	CUM Person	60			1,458	365		1,823	
015300-0600	Temporary water lines, per CUM of Distributed water and mobilization campuses site area. Example for site area more than 5000 m2 & 500 persons.	CUM Person	150			1,050	263		1,313	
015300-0800	Temporary water storage for construction. Assume 2 CUM steel tank per 1500 SQM of build-up Area. material cost depreciated. Example: required for 15,000 m2 build-up area, 10 tanks required	CUM GSQM	20			938	140		1,078	
015300-0900	GSM telephone sets for Senior contractor construction staff	Man Month							222	
015300-1000	Temporary Telephone & fax lines including wiring. 25 % salvage value	Line							850	
<b>015400</b>	<b>CONSTRUCTION AID</b>									
<b>015405</b>	<b>SAFETY :</b>									
015405-0100	Safety nets, 100 mm mesh with supports, average	SQM							50	
015405-0500	Weather Station, average depreciated cost with 30 % material salvage monthly	Month	1						408	408
<b>015440</b>	<b>SCAFFOLDING: 30% MATERIAL SALVAGE VALUE</b>									
015440-0200	Scaffolding exterior wall, steel, tubular, depreciated SQM cost. Quantity depends on area of exterior walls & building Shape & height. Complete with framing, catwalks, bridges, ladders	SQM Month				8	2		10	
015440-0300	Scaffolding interior wall up to 5 meter high, tubular steel, including planks, supports, base & accessories	SQM Month				5	1		6	
015440-0320	Scaffolding, Hand winch for masons, 30 meter long, 9 meter high	EA							583	
015440-0400	Staging swing, 225 Kg capacity, 0.6 m wide, 7 m long, hand operated, 20 m steel cable type, depreciated cost. Example erected for 10 months	Month	10			350	50	60	460	4,600
015440-0500	Staging swing lightweight, 100 Kg capacity, 0.6 m wide, 7 m long, hand operated, 60 m steel cable type, depreciated cost. Example erected for 18 months	Month	16			282	22	27	331	5,955
015440-0600	Staging swing lightweight, 100 Kg capacity, 0.6 m wide, 7 m long, powered electric operation, 90 m steel cable type, depreciated cost. Example erected	Month	24			675	33	50	958	23,000

**015500 CONSTRUCTION EQUIPMENT:**
**015520 CONSTRUCTION EQUIP. RENTAL OR OWN**

015520-0100	Construction equipment rental See Div. 016406 thru 016490									
015520-0200	Construction equipment owned, for depreciated value See Div. 016406 thru 016490									
<b>015535</b>	<b>MOBILIZ./DEMOBILIZ. CONTRACTOR OWNED EQUIPMENT:</b>	<b>Unit</b>	<b>Quantity</b>	<b>Crew Structure</b>						
015535-0100	Transportation within city limit approx. 120 km round trip small building const. jobs up to 20 million SR	Day	4	1,000 Driver			175	1,743	1,918	7,672
015535-0200	Transportation within city limit approx. 120 km round trip building const. jobs from 25 million SR to 80 Million SR	Day	7	1,000 Equip Operator			175	1,743	1,918	13,426
015535-0300	Transportation within city limit approx. 120 km round trip building const. jobs from 100 million SR to 175 Million SR	Day	11				175	1,743	1,918	21,097
015535-0400	Transportation within city limit approx. 120 km round trip building const. jobs over 200 million SR	Day	15				175	1,743	1,918	28,769
015535-0500	Transportation outside city limit approx. 1000 km round trip small building const. jobs up to 20 million SR	Day	7				175	1,743	1,918	13,426
015535-0600	Transportation outside city limit approx. 1000 km round trip building const. jobs from 25 million SR to 80 Million SR	Day	10				175	1,743	1,918	19,179
015535-0700	Transportation outside city limit approx. 1000 km round trip building const. jobs from 100 million SR to 175 Million SR	Day	14				175	1,743	1,918	26,651
015535-0800	Transportation outside city limit approx. 1000 km round trip building const. jobs over 200 million SR	Day	18				175	1,743	1,918	34,523
015535-0900	Transportation outside city limit approx. 1800 km round trip small building const. jobs up to 20 million SR	Day	9				175	1,743	1,918	17,261
015535-1000	Transportation outside city limit approx. 1800 km round trip building const. jobs from 25 million SR to 80 Million SR	Day	12				175	1,743	1,918	23,015
015535-1100	Transportation outside city limit approx. 1800 km round trip building const. jobs from 100 million SR to 175 Million SR	Day	16				175	1,743	1,918	30,887
016504-1200	Transportation outside city limit approx. 1800 km round trip building const. jobs over 200 million SR	Day	20				175	1,743	1,918	38,359
<b>015565</b>	<b>MOBILIZATION/DEMOBILIZATION RENTED EQUIPMENT:</b>									
015565-0100	For mobilization/demobilization rented equipment, see Div. 016406 thru 016490 cost built in within the monthly rental rate for each equipment.	Day								



TOTAL LOADED SALARY INCLUDES NON-WORKING DAYS PAID, SUCH AS HOLLIDAYS, FRIDAYS, VACATION.. ETC.

LABOR		COSTS IN SAUDI RIALS				AVERAGE		OVERHEAD		MONTHLY		LOADED COST		AVERAGE		BASIC SAL.		ALLOWANCES		INSURANCE		COMPENSATION			
CODE	CRAFTSMAN	MONTHLY	AVG %	% OF BASIC	LOADED COST	ANNUAL	BASIC SAL.	MONTHLY	HOUSING	LIVING	MEDICAL	GOSI	TICKETS	LEAVE PAY	PAID VACATIO	DAMA									
E-0010	PROJECT MANAGER LARGE OR UNIQUE PROJECTS	27,332.64	32.93%	46.94%	36,735.42	440,825.00	16,333.33	25,000.00	6,250.00	-	316.67	625.00	1,000.00	1,543.75	2,063.33	116.67									
	PROJECT MANAGER MEDIUM SIZE JOBS UP TO 100 M			49.24%	26,862.50	322,350.00		18,000.00	4,500.00	-	316.67	450.00	1,000.00	978.17	1,500.00	116.67									
	PROJECT MANAGER, PROJECTS LESS THAN 50 M			53.33%	16,400.00	220,800.00		12,000.00	3,000.00	-	316.67	300.00	1,000.00	666.67	1,000.00	116.67									
	PROJECT MANAGER SECRETARY			57.29%	5,932.29	47,187.50		2,500.00	625.00	-	79.17	62.50	250.00	140.63	208.33	86.67									
	Construction manager or superintendent, Unique & large jobs	22,631.25	33.72%	48.47%	29,683.33	356,200.00	15,000.00	20,000.00	5,000.00	-	316.67	500.00	1,000.00	1,083.33	1,666.67	116.67									
	Construction manager or superintendent, jobs between 50 & 100 million SR			50.88%	22,631.25	271,575.00		15,000.00	3,750.00	-	316.67	375.00	1,000.00	822.92	1,250.00	116.67									
	Construction manager or superintendent, jobs less than 50 million SR			55.79%	15,576.17	186,950.00		10,000.00	2,500.00	-	316.67	250.00	1,000.00	562.50	833.33	116.67									
	Field Architect, Engineer, unique & large jobs	19,340.28	34.51%	49.24%	25,862.50	322,350.00	12,666.67	16,000.00	4,000.00	-	316.67	450.00	1,000.00	978.17	1,500.00	116.67									
	Field Architect, Engineer, jobs between 50 & 100 million SR			53.33%	16,400.00	220,800.00		12,000.00	3,000.00	-	316.67	300.00	1,000.00	666.67	1,000.00	116.67									
	Field Architect, Engineer, jobs less than 50 million SR			59.48%	12,758.33	153,100.00		8,000.00	2,000.00	-	316.67	200.00	1,000.00	458.33	666.67	116.67									
	Field Civil Engineer, Unique & large jobs	19,340.28	34.51%	49.24%	25,862.50	322,350.00	12,666.67	16,000.00	4,000.00	-	316.67	450.00	1,000.00	978.17	1,500.00	116.67									
	Field Civil Engineer, jobs less than 50 millions			53.33%	16,400.00	220,800.00		12,000.00	3,000.00	-	316.67	300.00	1,000.00	666.67	1,000.00	116.67									
	Field Civil Engineer, jobs less than 50 million SR			59.48%	12,758.33	153,100.00		8,000.00	2,000.00	-	316.67	200.00	1,000.00	458.33	666.67	116.67									
	Field Electrical Engineer, Unique & large jobs	16,264.38	35.62%	50.88%	22,631.25	271,575.00	10,500.00	15,000.00	3,750.00	-	316.67	375.00	1,000.00	822.92	1,250.00	116.67									
	Field Electrical Engineer, Unique & large jobs			56.76%	15,576.17	186,950.00		10,000.00	2,500.00	-	316.67	250.00	1,000.00	562.50	833.33	116.67									
	Field Electrical Engineer, jobs less than 50 millions SR			63.73%	10,642.71	127,712.50		6,500.00	1,625.00	-	316.67	162.50	1,000.00	380.21	541.67	116.67									
	Field Industrial Engineer, Unique & large jobs	17,459.72	35.09%	50.26%	24,041.67	288,500.00	11,333.33	16,000.00	4,000.00	-	316.67	400.00	1,000.00	875.00	1,333.33	116.67									
	Field Industrial Engineer, jobs between 50 & 100 million SR			54.46%	16,989.58	203,875.00		11,000.00	2,750.00	-	316.67	275.00	1,000.00	614.58	916.67	116.67									
	Field Industrial Engineer, jobs less than 50 millions SR			62.11%	11,347.52	136,175.00		7,000.00	1,750.00	-	316.67	175.00	1,000.00	406.25	583.33	116.67									
	Field Mechanical Engineer, Unique & large jobs	16,264.38	35.62%	50.88%	22,631.25	271,575.00	10,500.00	15,000.00	3,750.00	-	316.67	375.00	1,000.00	822.92	1,250.00	116.67									
	Field Mechanical Engineer, jobs less than 50 millions			55.79%	15,576.17	186,950.00		10,000.00	2,500.00	-	316.67	250.00	1,000.00	562.50	833.33	116.67									
	Field Mechanical Engineer, jobs less than 50 million SR			63.73%	10,642.71	127,712.50		6,500.00	1,625.00	-	316.67	162.50	1,000.00	380.21	541.67	116.67									
	Field Quantity Surveyor	2,502.78	33.41%	50.57%	7,508.33	90,100.00	1,666.67	5,000.00	1,250.00	-	79.17	125.00	250.00	270.83	416.67	116.67									
	Field Surveyor	5,342.71		52.85%	5,342.71	64,112.50		3,500.00	875.00	-	79.17	87.50	250.00	192.71	291.67	86.67									
	Guards			107.80%	1,142.92	13,715.00		550.00		100.00	79.17	13.75	250.00	37.50	45.83	66.67									
	Laboratory Material Testing Engineer			53.33%	16,400.00	220,800.00		12,000.00	3,000.00	-	316.67	300.00	1,000.00	666.67	1,000.00	116.67									
	Laboratory Technicians			51.22%	6,047.92	72,575.00		4,000.00	1,000.00	-	79.17	100.00	250.00	218.75	333.33	66.67									
	Laboratory Labors			107.80%	1,142.92	13,715.00		550.00		100.00	79.17	13.75	250.00	37.50	45.83	66.67									
	Plant Manager			46.12%	11,886.58	142,275.00		8,000.00	2,000.00	-	79.17	200.00	250.00	427.08	666.67	66.67									
	Plant Electrical power, Operators			59.51%	5,509.17	42,110.00		2,200.00	550.00	-	79.17	55.00	250.00	125.00	183.33	86.67									
	Plant Networks Maintenance			62.42%	3,086.04	37,032.50		1,900.00	475.00	-	79.17	47.50	250.00	109.38	158.33	66.67									
	Plant Water Supplies Drivers			74.90%	2,098.75	25,185.00		1,200.00	300.00	-	79.17	30.00	250.00	72.92	100.00	86.67									
	Stores Manager			61.35%	3,227.08	38,725.00		2,000.00	500.00	-	79.17	50.00	250.00	114.58	166.67	66.67									
	Store Keepers			70.06%	2,380.83	28,570.00		1,400.00	350.00	-	79.17	35.00	250.00	83.33	116.67	66.67									
	Store Drivers			74.90%	2,098.75	25,185.00		1,200.00	300.00	-	79.17	30.00	250.00	72.92	100.00	86.67									
	Workshop Manager			46.12%	11,886.58	142,275.00		8,000.00	2,000.00	-	79.17	200.00	250.00	427.08	666.67	66.67									
	Workshop Mechanic			62.65%	5,342.71	64,112.50		3,500.00	875.00	-	79.17	87.50	250.00	192.71	291.67	86.67									
	Workshop Drivers			74.90%	2,098.75	25,185.00		1,200.00	300.00	-	79.17	30.00	250.00	72.92	100.00	86.67									
	PROJECT MANAGER SUPPORTING STAFF																								
	Accountant			80.67%	8,753.13	81,037.50		4,500.00	1,125.00	-	79.17	112.50	250.00	244.79	375.00	86.67									
	Accountant Aid			54.58%	4,637.50	55,650.00		3,000.00	750.00	-	79.17	75.00	250.00	166.67	250.00	86.67									
	Computer Operators			52.85%	5,342.71	64,112.50		3,500.00	875.00	-	79.17	87.50	250.00	192.71	291.67	86.67									
	Claims Manager			60.88%	22,631.25	271,575.00		15,000.00	3,750.00	-	316.67	375.00	1,000.00	822.92	1,250.00	116.67									
	Draftsman, shopdrawings			67.29%	5,932.29	47,187.50		2,500.00	625.00	-	79.17	62.50	250.00	140.63	208.33	86.67									
	Drivers			74.90%	2,098.75	25,185.00		1,200.00	300.00	-	79.17	30.00	250.00	72.92	100.00	86.67									
	Engineer, Architect, Shopdrawings & Materials Approval			65.79%	15,576.17	186,950.00		10,000.00	2,500.00	-	316.67	250.00	1,000.00	562.50	833.33	116.67									
	Engineer, Civil, Shopdrawings & Materials Approval			62.11%	11,347.92	136,175.00		7,000.00	1,750.00	-	316.67	175.00	1,000.00	406.25	583.33	116.67									
	Engineer, Electrical, Shopdrawings & Materials Approval			62.11%	11,347.92	136,175.00		7,000.00	1,750.00	-	316.67	175.00	1,000.00	406.25	583.33	116.67									
	Engineer, Mechanical, Shopdrawings & Materials Approval			62.11%	11,347.92	136,175.00		7,000.00	1,750.00	-	316.67	175.00	1,000.00	406.25	583.33	116.67									
	Engineer, Planning			59.48%	12,758.33	153,100.00		8,000.00	2,000.00	-	316.67	200.00	1,000.00	458.33	666.67	116.67									
	Engineer, Structural, Shopdrawings & Materials Approval			62.11%	11,347.92	136,175.00		7,000.00	1,750.00	-	316.67	175.00	1,000.00	406.25	583.33	116.67									
	Expediter			81.35%	3,227.08	38,725.00		2,000.00	500.00	-	79.17	50.00	250.00	114.58	166.67	66.67									
	File Keeper			66.13%	2,521.66	30,262.50		1,500.00	375.00	-	79.17	37.50	250.00	85.54	125.00	66.67									
	Office Service Labors			107.80%	1,142.92	13,715.00		550.00		100.00	79.17	13.75	250.00	37.50	45.83	66.67									
	Procurement Manager			64.58%	4,637.50	55,650.00		3,000.00	750.00	-	79.17	75.00	250.00	166.67	250.00	86.67									
	Cook			52.85%	5,342.71	64,112.50		3,500.00	875.00	-	79.17	87.50	250.00	192.71	291.67	86.67									
	Cook Assistant			95.21%	1,464.06	17,568.75		750.00	187.50	-	79.17	18.75	250.00	49.48	65.52	66.67									
	General Practitioner " Doctor "			45.58%	13,100.00	157,200.00		9,000.00	2,250.00	-	79.17	225.00	250.00	479.17	750.00	66.67									



**DIVISION 01 : GENERAL REQUIRMENTS:**

				CONTRACTOR OWNED EQUIPMENT			RENTAL	
CSI CODE	EQUIPMENT DESCRIPTION:	UNIT	QTY	OPERATION COST SR	EQUIPMENT DEPRECIATED COST SR/ DAY	EQUIPMENT DAILY COST INCLUDING OPERATION	COST SR PER DAY	RENTAL COST SR PER MONTH
<b>016 CONSTRUCTION EQUIPMENT.</b>								
<b>016406 CONCRETE EQUIPMENT:</b>								
016406-0200	Concrete <b>Cart</b> , 0.26 CUM, walking operator.			-	3.00	3.00		
016406-0300	Concrete <b>Cart</b> , 0.26 CUM, riding operator			4.50	35.00	39.50		
016406-0500	Concrete <b>Core drill</b> , electric, 25mm to 200mm bit diameter	EA	1	2.50	48.00	50.50	100	
016406-0600	Concrete <b>Core drill</b> , electric, 200mm to 600mm bit diameter	EA	1	3.50	68.80	72.30	200	
016406-0700	Concrete <b>Floor finisher</b> , gas, riding trowel, 1.2m diameter	EA	1	7.50	25.00	32.50		
016406-0800	Concrete <b>Floor finisher</b> , gas, manual, 4 blades, 1.2m diameter.			2.50	9.00	11.50		
016406-0900	Concrete <b>Float</b> , hand operated (Bull Float), 1.2 m wide			0.50	5.50	6.00		
016406-1000	Concrete & terrazzo <b>Grinder</b> , floor, electric			4.50	40.00	44.50		
016406-1200	Concrete & mortar <b>Mixer</b> , gas, 0.26 CUM			5.00	30.00	35.00		
016406-1300	Concrete & mortar <b>Mixer</b> , 0.45 CUM			8.00	35.00	43.00		
016406-1400	Concrete <b>Mixer</b> , gas, stationary, tilt drum, 1.5 CUM			20.00	120.00	140.00		
016406-1500	Concrete <b>Pump</b> , truck mounted, 100 mm line, 24 m boom.			27.50	750.00	777.50	1200	
016406-1600	Concrete <b>Pump</b> , truck mounted, 127 mm line, 34 m boom.			35.00	900.00	935.00	1300	
016406-1700	Concrete <b>Saw</b> , manual, gas, 20 HP			7.00	45.00	52.00		
016406-1800	Concrete <b>Saw</b> , self-propelled, gas, 30 HP			16.25	105.00	121.25		
0164061900	Concrete <b>Vibrator</b> , electric, 2 KW			1.25	3.00	4.25		
016406-2000	Concrete <b>Vibrator</b> , gas, 7.5 HP			3.20	8.00	11.20		
016406-2100	Concrete <b>Transit mixer</b> , hydraulic drive, 250 HP, 6 CUM, rear or front discharge			107.00	175.00	282.00	0	0
016406-2200	Concrete <b>Transit mixer</b> , hydraulic drive, 285 HP, 9 CUM, rear or front discharge			127.00	271.00	398.00	0	0
<b>016408 EARTHWORK EQUIPMENT:</b>								
016408-0100	<b>Aggregate Spreader</b> , self-propelled type, 2.4 to 3.6 m wide			3.50	80.00	83.50		
016408-0200	<b>Auger</b> , truck mounted, vertical drilling, to 7.6 m deep.			60.00	410.00	470.00		
016408-0300	<b>Auger</b> , horizontal boring machine, 300 mm to 1.2 m, 65 HP			70.00	500.00	570.00		
016408-0400	<b>Backhoe with attachments</b> , diesel hydraulic, crawler mounted, 0.57 CUM			75.30	356.00	431.30	400	
016408-0500	<b>Backhoe with attachments</b> , diesel hydraulic, crawler mounted, 0.76 CUM			95.53	382.00	477.53	450	
016408-0600	<b>Backhoe with attachments</b> , diesel hydraulic, crawler mounted, 1.5 CUM			146.00	525.00	671.00	500	
016408-0700	<b>Backhoe with attachments</b> , diesel hydraulic, crawler mounted, 1.9 CUM			198.44	746.00	944.44	800	
016408-0800	<b>Backhoe with attachments</b> , diesel hydraulic, crawler mounted, 2.6 CUM			203.00	818.00	1,021.00	1000	
016408-1000	<b>Backhoe - loader</b> , with attachments, wheel type, 0.57 CUM capacity, up to 60 HP.			62.50	205.00	267.50	350	
016408-1100	<b>Backhoe - loader</b> , with attachments, wheel type, 0.95 CUM capacity, up to 80 HP.			79.00	273.00	352.00	400	
016408-1200	<b>Backhoe - loader</b> , with attachments, wheel type 1.30 CUM capacity, up to 110 HP.			91.50	320.00	411.50	500	
016408-2000	<b>Compactor, roller</b> , 2 drum, 900 Kg, operator walking			9.00	40.00	49.00		
016408-2100	<b>Rammer compactor</b> , gas, 450 Kg			1.50	9.00	10.50		
016408-2200	<b>Vibrating plate</b> , gas, 600 mm x 900 mm 900 kg			2.51	8.00	10.51		4000
016408-2300	<b>Hammer</b> , pavement demolition, diesel 600 Kg.			16.55	49.00	65.55		
016408-2400	<b>Hammer</b> , pile driving, air, 33 kilojoule, 110 beats/ minute			9.00	63.00	72.00		
016408-2500	<b>Hammer</b> , pile driving, diesel, 60 kilojoule			20.00	95.00	115.00		
016408-2600	<b>Roller</b> , tandem, diesel, up to 1 ton			10.25	61.00	61.25		
016408-2700	<b>Roller</b> , tandem, vibratory, 12 HP, gas, 1.8 ton.			14.75	56.00	70.75		7300
016408-2800	<b>Roller</b> , tandem, diesel, 10 ton.			24.00	65.00	89.00		12360
016408-2900	<b>Roller</b> , tandem, vibratory steel drum, pneumatic tire, diesel, 13 ton.			25.00	110.00	135.00		15240
016408-3000	<b>Shovel</b> , front attachment, mechanical, 0.57 CUM.			54.00	257.00	311.00	400	
016408-3100	<b>Shovel</b> , front attachment, mechanical, 1.1 CUM			84.00	337.00	421.00	500	
016408-3200	<b>Shovel</b> , front attachment, mechanical, 2.3 CUM			120.00	341.00	461.00	900	16900
016408-3300	<b>Tractor</b> , crawler, with bulldozer, torque converter, diesel, 75 HP.			73.00	290.00	363.00	400	
016408-3400	<b>Tractor</b> , crawler, with bulldozer, torque converter, diesel, 140 HP			115.00	454.00	609.00	700	
016408-3500	<b>Tractor</b> , crawler, with bulldozer, torque converter, diesel, 200 HP			153.00	579.00	732.00	800	
016408-3600	<b>Tractor</b> , crawler, with bulldozer, torque converter, diesel, 400 HP			294.00	1,227.00	1,521.00	1100	
016408-3700	<b>Tractor</b> , crawler, with bulldozer, torque converter, diesel, 700 HP.			473.00	1,975.00	2,448.00		



**DIVISION 01 : GENERAL REQUIRMENTS:**

CSI CODE	EQUIPMENT DESCRIPTION:	UNIT	QTY	CONTRACTOR OWNED EQUIPMENT			RENTAL	
				OPERATION COST SR	EQUIPMENT DEPRECIATED COST SR/ DAY	EQUIPMENT DAILY COST INCLUDING OPERATION	COST SR PER DAY	RENTAL COST SR PER MONTH
016406-3800	Tractor loader, wheel, torque converter, 4x4, up to 1.0 CUM, 65 HP			68.00	250.00	318.00		
016408-3900	Tractor loader, wheel, torque converter, 4x4, up to 1.3 CUM, 100 HP			127.00	330.00	457.00		
016408-4000	Tractor loader, wheel, torque converter, 4x4, up to 2.3 CUM, 170 HP			151.50	685.00	836.50		
016408-4100	Tractor loader, wheel, torque converter, 4x4, up to 4.0 CUM, 270 HP			256.45	900.00	1,156.45		
016408-4200	Tractor loader, wheel, torque converter, 4x4, up to 5.3 CUM, 375 HP			373.50	1,150.00	1,523.50		
016408-4300	Trencher, chain, boom type, wheel type, diesel, 1.2 m deep, 300 mm wide			28.00	104.00	132.00		
016408-4400	Truck, dump, 25 ton			107.00	223.00	330.00	400	
016408-4500	Truck, dump, 15 ton			85.00	176.00	265.00	300	
<b>016420</b>	<b>GENERAL EQUIPMENT:</b>							
016420-0100	Air compressor, diesel engine, rotary screw, 0.28 m3/s, with accessories			25.00	43.00	68.00		4300
016420-0200	Air compressor, diesel engine, rotary screw, 0.35 m3/s, with accessories			30.00	55.00	85.00		4710
016420-0300	Pneumatic nailer with accessories			0.50	28.00	28.50		
016420-0400	Electric Cable Winch, with accessories & 100 set rollers straight, 10 rollers angle			20.00	109.00	129.00		
016420-0500	Electric Cable Trailer, 7.5 ton			0.50	26.00	26.50		
016420-0600	Electric Cable Trailer, 10 ton			0.50	32.00	32.50		
016420-0700	Distributor, asphalt, trailer mounted, 11 CUM, diesel, 38 HP			16.25	450.00	466.25		
016420-0800	Drill, rotary hammer, electric, 38 mm diameter			1.00	20.00	21.00		
016420-0900	Emulsion sprayer, 250 liter, gas engine, 5 HP			1.75	35.00	36.75		
016420-1000	Forklift, wheeled, 4 wheel drive, diesel, 1.8 ton, 8.5 m lift			50.00	122.00	172.00	400	7500
016420-1100	Generator, gas engine, 10 KW			16.36	50.00	66.36		
016420-1200	Generator, diesel engine, 300 KW			160.00	100.00	260.00	600	
016420-1400	Level, laser type, for pipe laying, self leveling				350.00	350.00		
016420-1500	Mixer, plaster & mortar, powered, 0.28 m3, 9 HP			2.25	38.00	40.25		
016420-1600	Paint sprayer, 0.008 m3/s			0.25	30.00	30.25		
016420-1700	Pump, submersible, electric, 50 mm, 7.6 liter/s			1.25	40.00	41.25		
016420-1800	Pump, submersible, electric, 100 mm, 35 liter/s			4.25	55.00	59.25		
016420-1900	Pump, submersible, electric, 150 mm, 100 liter/s			16.50	150.00	166.50		
016420-2000	Sandblaster, portable, open top, 0.17 m3 capacity			0.50	32.00	32.50		
016420-2100	Sander, floor			0.50	30.00	30.50		
016420-2200	Sander, edger			0.50	20.00	20.50		
016420-2300	Saw masonry, table mounted, 356 mm diameter, 5 HP			4.25	35.00	39.25		
016420-2400	Steam cleaner, 750 liter/hour			2.50	45.00	47.50		
016420-2500	Truck, pickup, 0.7 ton, 4 wheel drive			15.00	60.00	75.00		
016420-2600	Welder, electric, 300 amps			43.00	95.00	138.00	200	5000
<b>016460</b>	<b>LIFTING AND HOISTING EQUIPMENT:</b>							
016460-0100	Crane, climbing, 31 m jib, 4.65 ton, 1.37 m/s			110.00	600.00	710.00		
016460-0300	Crane, tower, static, 40 m high, 32 m jib, 2.8 ton capacity at 2 m/s			115.00	1,000.00	1,115.00		
016460-0400	Crane, crawler, cable, 0.57 m3, 16 ton, at 3.65 m/s			110.00	550.00	660.00		
016460-0500	Crane, crawler, cable, 1.15 m3, 36 ton, at 3.65 m/s			165.00	900.00	1,065.00		
016460-0600	Crane, crawler, cable, 1.50 m3, 45 ton, at 3.65 m/s			160.00	1,000.00	1,160.00		
016460-0700	Crane, truck mounted, cable operated, 6x4, 36 ton at 3.65 m/s			170.00	615.00	785.00	800	
016460-0800	Crane, truck mounted, cable operated, 6x4, 55 ton at 3.65 m/s			187.00	790.00	977.00	1200	
016460-0900	Crane, truck mounted, cable operated, 6x4, 75 ton at 3.65 m/s			235.00	1,000.00	1,235.00	1500	
016460-1000	Crane, truck mounted, cable operated, 6x4, 100 ton at 3.65 m/s			270.00	1,400.00	1,670.00	5000	
016460-1100	Crane, truck mounted, cable operated, 6x4, 150 ton at 3.65 m/s			375.00	1,750.00	2,125.00		
016460-1200	Crane, truck mounted, hydraulic, 25 ton capacity			120.00	450.00	570.00		
016460-1300	Crane, truck mounted, hydraulic, 50 ton capacity			180.00	650.00	830.00	1200	
016460-1400	Crane, truck mounted, hydraulic, 75 ton capacity			200.00	1,000.00	1,200.00	1500	
016460-1500	Hoist, chain type, overhead, manual, 9 ton			0.25	20.00	20.25		
016460-1600	Hoist and single tubular tower, 2 ton, 30 m high			16.25	175.00	191.25		
016460-1700	Jack, hydraulic, 90 ton			0.10	12.00	12.10		
016460-1800	Jack, hydraulic, climbing with 15 m jackrods & control consoles, 27 ton			0.10	80.00	80.10		
016460-1900	Jack, hydraulic, climbing with 15 m jackrods & control consoles, 45 ton			0.10	120.00	120.10		
016460-2000	Jack, hydraulic, climbing with 15 m jackrods & control consoles, 110 ton			0.10	300.00	300.10		
<b>016490</b>	<b>WELLPOINT EQUIPMENT:</b>							
016490-0100	Combination jetting & wellpoint pump, 60HP, diesel			8.50	160.00	168.50		
016490-0200	Wellpoint pump, diesel powered, 200 mm, 40 HP			18.00	180.00	198.00		
016490-0300	Wellpoint pump, diesel powered, 250 mm, 75 HP			22.00	200.00	222.00		
016490-0400	Wellpoint pump, diesel powered, 300 mm, 100 HP			35.00	300.00	335.00		
016490-0500	Wellpoint pump, diesel powered, 300 mm, 175 HP			40.00	350.00	390.00		



# Example Project

This Appendix provides detailed information for the 5 star hotel building example project. It is 16 floors containing 496 guest rooms, one first floor, and one ground floor with a basement parking garage.

The 10,000 square meter site is in a suburban area in Riyadh city with good access and sufficient material storage area. The site will require clearing. An open ditches cross the rear of the site, requiring construction of a concrete pipe drainage system, and trenches for electrical and telecommunication systems to best utilize the site. Leveling the site for the building will require removal of a low knoll.

## The project involves the following:

- 1) 16 floors for guest rooms (496 rooms) of total 46,446 square meter
- 2) One ground floor of total 5144 square meter
- 3) One first floor of total 5144 square meter.  
The height of each floor 3.20 meter
- 4) Basement parking garage of total 160 car parking

## Cost estimating parameter:

<b>Bare Cost:</b>	SR 3352 per square meter (excluding furniture)
<b>Project Total Direct Cost:</b>	SR 155,690,000 including SR 66,000,000 for subcontracting work
<b>General Contractor Cost:</b>	SR 89,690,000 as total of the following:
a) <b>Material Cost:</b>	SR 72,648,900 and that equal to 81.0% of the general contractor cost.
b) <b>Labor Cost:</b>	SR 13,453,500 and that equal to 15.0% of the general contractor cost.
c) <b>Equipment Cost:</b>	SR 3,587,600 and that equal to 4.0% of the general contractor cost.

**Contract Duration:** 36 Months.

## ANALYSIS OF MANPOWER DIRECT & INDIRECT COSTS

NOTE: VACATION PAY INCLUDED WITH 257 YEARLY WORK DAYS

HOUSING INCLUDED IN MOBILIZATION.

COSTS IN SAUDI RIALS:	OVERHEAD	LOADED COST	BASIC SALARY	ALLOWANCES		INSURANCE			COMPENSATION		
CRAFTSMAN	% W/O HOUSING	MONTHLY	AVG/MONTH	HOUSING	LIVING	MEDICAL	GOSI	TICKETS	LEAVE PAY	VAC. PAY	IGAMA
ALUMINIUM WORKER	35.91%	1,766.875	1,300.00	-	100.00	79.17	32.50	125.00	63.54	-	66.67
ASBESTOS WORKER	35.91%	1,766.875	1,300.00	-	100.00	79.17	32.50	125.00	63.54	-	66.67
BRICKLAYER	42.20%	1,521.542	1,070.00	-	100.00	79.17	26.75	125.00	53.96	-	66.67
BRICKLAYER HELPER	71.66%	1,004.208	585.00	-	100.00	79.17	14.63	125.00	33.75	-	66.67
CARPENTER, ROUGH	44.69%	1,446.875	1,000.00	-	100.00	79.17	25.00	125.00	51.04	-	66.67
CARPENTER, FINISH	38.35%	1,660.208	1,200.00	-	100.00	79.17	30.00	125.00	59.38	-	66.67
CEMENT FINISHER	42.20%	1,521.542	1,070.00	-	100.00	79.17	26.75	125.00	53.96	-	66.67
COMMON LABORER	75.80%	966.875	550.00	-	100.00	79.17	13.75	125.00	32.29	-	66.67
DRIVER, TRUCK	47.33%	1,377.542	935.00	-	100.00	79.17	23.38	125.00	48.33	-	66.67
DUCT FABRICATOR	37.45%	1,697.542	1,235.00	-	100.00	79.17	30.88	125.00	60.83	-	66.67
DUCT FITTER	36.60%	1,734.875	1,270.00	-	100.00	79.17	31.75	125.00	62.29	-	66.67
EQUIPMENT OPERATOR, LIGHT	44.69%	1,446.875	1,000.00	-	100.00	79.17	25.00	125.00	51.04	-	66.67
EQUIPMENT OPERATOR, HEAVY	39.16%	1,628.208	1,170.00	-	100.00	79.17	29.25	125.00	58.13	-	66.67
ELECTRICIAN, NORMAL	39.16%	1,628.208	1,170.00	-	100.00	79.17	29.25	125.00	58.13	-	66.67
ELECTRICIAN, SPECIALIST	33.82%	1,873.542	1,400.00	-	100.00	79.17	35.00	125.00	67.71	-	66.67
ELECTRICIAN, LINEMAN	36.60%	1,734.875	1,270.00	-	100.00	79.17	31.75	125.00	62.29	-	66.67
ELEVATOR WORKER	33.75%	2,006.250	1,500.00	-	-	79.17	37.50	250.00	72.92	-	66.67
ENGINEER	40.83%	7,041.667	5,000.00	1,250		79.17	125.00	250.00	270.83	-	66.67
FORMAN, LABOR	42.20%	1,521.542	1,070.00	-	100.00	79.17	26.75	125.00	53.96	-	66.67
FORMAN, TECHNICAL, SKILLED	30.88%	2,054.875	1,570.00	-	100.00	79.17	39.25	125.00	74.79	-	66.67
GLAIZER	35.91%	1,766.875	1,300.00	-	100.00	79.17	32.50	125.00	63.54	-	66.67
HELPER	71.66%	1,004.208	585.00	-	100.00	79.17	14.63	125.00	33.75	-	66.67
HVAC WORKER	36.60%	1,734.875	1,270.00	-	100.00	79.17	31.75	125.00	62.29	-	66.67
MARBLE FIXER	35.91%	1,766.875	1,300.00	-	100.00	79.17	32.50	125.00	63.54	-	66.67
MASON	42.20%	1,521.542	1,070.00	-	100.00	79.17	26.75	125.00	53.96	-	66.67
MECHANIST	35.15%	1,804.208	1,335.00	-	100.00	79.17	33.38	125.00	65.00	-	66.67
PAINTER	44.69%	1,446.875	1,000.00	-	100.00	79.17	25.00	125.00	51.04	-	66.67
PILE DRIVER	29.43%	2,161.542	1,670.00	-	100.00	79.17	41.75	125.00	78.96	-	66.67
PIPE FITTER	36.60%	1,734.875	1,270.00	-	100.00	79.17	31.75	125.00	62.29	-	66.67
PLUMBER	39.16%	1,628.208	1,170.00	-	100.00	79.17	29.25	125.00	58.13	-	66.67
ROOF WORKER	40.17%	1,590.875	1,135.00	-	100.00	79.17	28.38	125.00	56.67	-	66.67



## ANALYSIS OF MANPOWER DIRECT & INDIRECT COSTS

NOTE: VACATION PAY INCLUDED WITH 257 YEARLY WORK DAYS

HOUSING INCLUDED IN MOBILIZATION.

COSTS IN SAUDI RIALS:	OVERHEAD	LOADED COST	BASIC SALARY	ALLOWANCES		INSURANCE			COMPENSATION		
CRAFTSMAN	% W/O HOUSING	MONTHLY	AVG/MONTH	HOUSING	LIVING	MEDICAL	GOSI	TICKETS	LEAVE PAY	VAC. PAY	IQAMA
SPRINKLER INSTALLER	35.91%	1,766.875	1,300.00	-	100.00	79.17	32.50	125.00	63.54	-	66.67
SHEET METAL WORKER	33.82%	1,873.542	1,400.00	-	100.00	79.17	35.00	125.00	67.71	-	66.67
SKILLED LABORER	32.53%	1,948.208	1,470.00	-	100.00	79.17	36.75	125.00	70.63	-	66.67
STEAM FITTER	35.91%	1,766.875	1,300.00	-	100.00	79.17	32.50	125.00	63.54	-	66.67
STEEL FIXER REINFORCEMENT	43.40%	1,484.208	1,035.00	-	100.00	79.17	25.88	125.00	52.50	-	66.67
STEEL STRUCTURAL FIXER	38.35%	1,660.208	1,200.00	-	100.00	79.17	30.00	125.00	59.38	-	66.67
SURVEYOR	31.51%	2,150.250	1,635.00	-	-	79.17	40.88	250.00	78.54	-	66.67
SUPERVISOR	28.39%	2,400.917	1,870.00	-	-	79.17	46.75	250.00	88.33	-	66.67
TILE LAYER	42.20%	1,521.542	1,070.00	-	100.00	79.17	26.75	125.00	53.96	-	66.67
TILE LAYER HELPER	71.66%	1,004.208	585.00	-	100.00	79.17	14.63	125.00	33.75	-	66.67
WELDER	36.60%	1,734.875	1,270.00	-	100.00	79.17	31.75	125.00	62.29	-	66.67

**EXAMPLE FOR APPLYING GENERAL REQUIRMENTS:**

**BUILDING: 5 STAR HOTEL - FURNITURE NOT INCLUDED**

**BUILDING DATA ASSUMPTIONS:**

<b>ASSUMPTION</b>	<b>AREA</b>	<b>FLOORS</b>
GUEST FLOORS		16
PUBLIC FLOOR EACH M <sup>2</sup>	5,144	2
BASEMENT M <sup>2</sup>	5,833	1
TOTAL BUILD - UP AREA	46,446	
NUMBER OF ROOMS	496	
DIRECT COST MATERIAL - GENERAL CONTRACTOR	72,648,900	
LABOR DIRECT COST GC	13,453,500	
EQUIPMENT COST GC	3,587,600	
TOTAL DIRECT COST GC "GENERAL CONTRACTOR"	89,690,000	
TOTAL DIRECT COST SUBCONTRACTORS	66,000,000	
TOTAL DIRECT COST	155,690,000	
CONSTRUCTION PERIOD IN MONTHS	36	
<b>MANPOWER:</b>		
TOTAL MANHOURS	1,960,000	
EXPECTED PEAK NUMBER OF LABORS	699	
EXPECTED AVERAGE NUMBER OF LABORS	350	
CAMPUSES DESIGNED FOR	500	
AVERAGE NUMBER OF SKILLED WORKER	275	
NUMBER OF COMMON LABORERS	200	
NUMBER OF FORMANS, INSPECTORS	25	
SITE AREA	10,000	
FOOT PRINT AREA	5,144	
FURNITURE NOT INCLUDED	21,000,000	MSR



**DIVISION 01 : GENERAL REQUIREMENTS:**

CSI CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT SALARY	% SALARY OVERHEAD	UNIT MATERIAL COST	UNIT LABOR COST	UNIT EQ. COST	TOTAL UNIT COST	TOTAL COST
<b>010 000 DIRECT OVERHEAD RUNNING COSTS:</b>										
<b>010100 DIRECT OVERHEAD COSTS:</b>										
<b>010 110 CONSTRUCTION STAFF AT SITE:</b>										
<b>010112 FIELD STAFF</b>										
010112-0100	Construction manager or superintendent, unique & large jobs	Man Month	33	20,000	48.42%				29,682	979,550
010112-0120	Construction manager or superintendent, jobs between 50 & 100 million SR	Man Month		15,000	50.88%				22,631	0
010112-0140	Construction manager or superintendent, jobs less than 50 million SR	Man Month		10,000	55.79%				15,579	0
010112-0200	Field Architect Engineer, unique & large jobs	Man Month	24	18,000	49.24%				26,863	644,700
010112-0220	Field Architect Engineer, jobs between 50 & 100 million SR	Man Month		12,000	53.33%				18,400	0
010112-0240	Field Architect Engineer, jobs less than 50 million SR	Man Month		8,000	59.48%				12,758	0
010112-0300	Field Civil Engineer, unique & large jobs	Man Month	12	18,000	49.24%				26,863	322,350
010112-0320	Field Civil Engineer, jobs less than 50 million SR	Man Month		12,000	53.33%				18,400	0
010112-0340	Field Civil Engineer, jobs less than 50 million SR	Man Month		8,000	59.48%				12,758	0
010112-0400	Field Electrical Engineer, unique & large jobs	Man Month	30	15,000	50.88%				22,631	678,938
010112-0420	Field Electrical Engineer, unique & large jobs	Man Month		10,000	55.79%				15,579	0
010112-0440	Field Electrical Engineer, jobs less than 50 million SR	Man Month		6,500	63.73%				10,843	0
010112-0500	Field Industrial Engineer, unique & large jobs	Man Month		16,000	50.26%				24,242	0
010112-0520	Field Industrial Engineer, jobs between 50 & 100 million SR	Man Month		11,000	54.45%				16,990	0
010112-0540	Field Industrial Engineer, jobs less than 50 million SR	Man Month		7,000	62.11%				11,346	0
010112-0600	Field Mechanical Engineer, unique & large jobs	Man Month	30	15,000	50.88%				22,631	678,938
010112-0620	Field Mechanical Engineer, jobs less than 50 million SR	Man Month		10,000	55.79%				15,579	0
010112-0640	Field Mechanical Engineer, jobs less than 50 million SR	Man Month		6,500	63.73%				10,843	0
010112-0700	Field Quantity Surveyor	Man Month	30	5,000	50.17%				7,506	225,250
010112-0800	Field Surveyor	Man Month	25	3,500	52.65%				5,343	133,568
010112-0900	Guards	Man Month	108	550	107.80%				1,143	123,435
010112-1100	Laboratory Material Testing Engineer	Man Month	16	12,000	53.33%				18,400	294,400
010112-1200	Laboratory Technicians	Man Month	32	4,000	51.20%				6,048	193,533
010112-1300	Laboratory Laborer	Man Month	32	550	107.80%				1,143	36,579
010112-1400	Plants Manager	Man Month	36	8,000	46.12%				11,690	420,825
010112-1500	Plant, Electrical power, Operations	Man Month	36	2,200	59.51%				3,509	126,330
010112-1600	Plant, Network Maintenance	Man Month		1,900	62.42%				3,066	0
010112-1700	Plant, Water Supplies, Drivers	Man Month		1,200	74.90%				2,099	0
010112-1800	Stores Manager	Man Month	33	2,000	61.35%				3,227	106,494
010112-1900	Store Keepers	Man Month	33	1,400	70.06%				2,361	78,568
010012-2000	Store Drivers	Man Month	50	1,200	74.90%				2,099	104,938
010112-2100	Workshop Manager	Man Month		8,000	46.12%				11,690	0
010112-2200	Workshop Mechanic	Man Month	33	3,500	52.65%				5,343	176,309
010112-2300	Workshop Drivers	Man Month	50	1,200	74.90%				2,099	104,938
<b>010114 PROJECT MANAGER:</b>										
					0.00%					
010114-0100	PROJECT MANAGER LARGE OR UNIQUE PROJECTS	Man Month	36	25,000	46.94%				36,735	1,322,475
010114-0120	PROJECT MANAGER MEDIUM SIZE JOBS UP TO 100 M	Man Month		18,000	49.24%				26,863	0
010114-0140	PROJECT MANAGER, PROJECTS LESS THAN 50 M	Man Month		12,000	53.33%				18,400	0
010114-0160	Project Manager Secretary	Man Month	36	2,500	53.33%				3,833	138,000
<b>010116 PROJECT MANAGER SUPPORTING STAFF:</b>										
					0.00%					
010116-0100	Accountant	Man Month	36	4,500	50.07%				6,753	243,113
010116-0200	Accountant Aid	Man Month		3,000	54.58%				4,638	0
010116-0300	Computer Operators	Man Month	66	3,500	52.65%				5,343	352,819
010116-0400	Claims Manager	Man Month	8	15,000	50.88%				22,631	135,788
010116-0500	Draftsman, shopdrawings	Man Month	36	2,500	57.29%				3,932	141,563
010116-0600	Drivers	Man Month	36	1,200	74.90%				2,099	75,555
010116-0700	Engineer, Architect, Shopdrawings & Materials Approval	Man Month	12	10,000	55.79%				15,579	186,950
010116-0800	Engineer, Civil, Shopdrawings & Materials Approval	Man Month	12	7,000	62.11%				11,346	136,175
010116-0900	Engineer, Electrical, Shopdrawings & Materials Approval	Man Month	12	7,000	62.11%				11,346	136,175
010116-1000	Engineer, Mechanical, Shopdrawings & Materials Approval	Man Month	12	7,000	62.11%				11,346	136,175
010116-1100	Engineer, Planning	Man Month	18	8,000	59.48%				12,758	229,650
010116-1200	Engineer, Structural, Shopdrawings & Materials Approval	Man Month	12	7,000	62.11%				11,346	136,175
010116-1300	Expediter	Man Month	30	2,000	61.35%				3,227	96,813
010116-1400	File Keeper	Man Month	36	1,500	68.13%				2,522	90,788
010116-1500	Office Service, Laborers	Man Month	36	550	107.80%				1,143	41,145
010116-1600	Procurement Manager	Man Month	24	3,000	54.58%				4,638	111,303







# **DIVISION 01 : GENERAL REQUIREMENTS:**

CSI CODE	ITEM DESCRIPTION	UNIT	QUNTY	UNIT SALARY	% SALARY OVERHEAD	UNIT MATERIAL COST	UNIT LABOR COST	UNIT EQ. COST	TOTAL UNIT COST	TOTAL COST
010340-0100	Cars Insurance,contractor staff	Car Month	207						125	25,875
010340-0200	Cars Maintenance & fuel, Contractor staff	Car Month	207						350	73,450
010340-0300	Consumables,housekeeping, for all campuses, Average.	Man Month	13,040						7	91,278
010340-0400	Cooks for all contractor campuses	Man Month	30	3,500.00	52.85%				5,343	160,281
010340-0500	Cook assistants	Man Month	85	550.00	107.80%				1,143	97,148
010340-0600	Drinking water, contractor campuses	Man Month	13,040			24.00			24	312,952
010340-0700	Electrical power supply per Person,city connected, Monthly, all campuses at 575 KWH per man month	Man Month							115	0
010340-0800	Electrical power supply per Person, on-site generation, Monthly, all campuses at 575 KWH per man month	Man Month	13,040						173	2,249,341
010340-0900	Housekeeping, cleaning staff Assume 1 Laborer for ever 12 staff persons, "if housing provided"	Man Month		550.00	107.80%				1,143	0
010340-1000	Land rental,contractor full campuses,if applicable Less than 100 persons Assume 40 m2/person,100 to 200 person 30m2,More than 200 persons 20 m2,Cost Varies with location, Study Case:350 persons,36 months, within 50 KM from site in Riyadh.	Man Month SQM	252,000			3.75			4	945,000
010340-1100	Labor transportation from off-site labor campuses to site within 50 KM trip distance.	Man Month	12,584	13.00	74.90%		22.73	5	26	354,250
010340-1200	Water Supply city connected, per person, Monthly, at 8 CUM per person	Man Month							44	0
010340-1300	Water supply per person, on-site delivery,Monthly	Man Month	13,040						67	869,311

## **010400 ENVIROMENTAL & SAFETY MEASURES EXPENSES:**

010400-0100	Ambulance insurance	Month	32						250	8,000
010400-0200	Ambulance maintenance & fuel	Month	32						300	9,600
010400-0300	Doctor, "general practice" in remote sites	Man Month								0
010400-0400	First aid expenses average	Man Month	13,040						15	195,595
010400-0500	Medicine consumables for remote sites	Man Month	13,040						35	456,388
010400-0600	Sewer, Septic tank(s) contents removal, all campuses & construction area pits. Assumed 0.15 cum daily per person.	Man Month	13,040						36	469,428
010400-0700	Progressive site clean-up, Based on site area,assume monthly at 0.026 Hour/SQM. Consider actual cleaning area equals to uncovered site area.	Month Sqm	174,816				0.03	0	0	26,224
010400-0800	Progressive Buildings' clean-up, Based on build-up area,assume monthly 0.09 Hour/SQM labor and 0.005 HRS/SQM equipment. Actual cleaning period is 50% of project time.	Month Sqm	836,026				0.00	0	0	223,115

## **010420 INSURANCE**

010420-0100	Builders all risk type insurance, percent of contract value	% Job Value	0.25%			155,690,000.00			155,690,000	389,225
010420-0200	Builders equipment insurance, percent of total on-site equip. value	% Eq Value	0.65%			3,587,600.00			3,587,600	23,316
010420-0300	Builders risk standard Insurance, percent of contract value	% Job Value	0.15%							0
010420-0400	Employees Medical insurance, See Manpower OH costs Div. 010058	Man Year							900	0
010420-0500	Employees social security insurance,See manpower OH costs Div. 010058	Man Month								0

## **010440 JOB CONDITIONS & PRICE ESCALATION:**

010440-0100	Escalation to mid - point of construction for jobs over then 2 years, consider 1.5 % annually of the total direct cost every other year	% -years	1.500%					155,690,000	155,690,000	2,335,350
010440-0200	Labor shortage at site location, add 10 % to labor cost value.	Percent	0.00%			13,453,500			13,453,500	0
010440-0300	Restricted sites to reachback of working space add 3 % of labor & material cost value	Percent	0.00%					155,690,000	155,690,000	0
010440-0400	Shortage of subcontractors at site location, add 10 % on specific subcontracts.	Percent	0.00%			66,000,000			66,000,000	0

## **010500 GENERAL OVERHEAD COSTS:**

### **010520 MARK - UP:**

### **ILLUSTRATION AND ASSUMPTIONS**

AS JOB TIME IS 36 MONTHS & ESTIMATED COMPLETION IS 36 MONTHS, OVERTIME WORK IS N/A

010520-0200	Overtime work to complete job within assigned construction period required. To compute month rate, Use corresponding % from table to multiply by labor & equip cost	Month Percent		NOT APPLICABLE		13,453,500	3,587,600	17,041,100		0
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## **010560 OVERHEAD COSTS LABOR:**

010560-0100	Engineer average wage,overhead costs, housing not included, percent of Basic Salary	%	0	included in labor cost						0
010560-0200	Laborer overhead costs, housing not included, percent of laborers Basic Wages	%	1	included in labor cost						0
010560-0300	Skilled Laborer average overhead costs, housing not included, percent of Basic Wages	%	0	included in labor cost						0
010560-0400	Special Skilled worker overhead costs, housing not included, percent Of Basic Wages	%	0	included in labor cost						0
010560-0500	For staff & labor Housing See DIV. 015									0

## **010570 GEN. CONTRACTOR OVERHEAD ON SUBCONT.PRICE:**

010570-1000	Overhead on subcontractors price	%	15.00%	CALCULATED IN SUMMARY						0
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## **010580 UNSEEN EXPENSES:**

010580-0100	Site unseen overhead expenses such as mail, express mail, E-mail, work delays due to weather conditions, etc. Percent of direct cost @	%	0.00%	NOT APPLICABLE					155,690,000	0
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## **010590 PROFIT: Depending on Project size**

010590-0100	General contractor profit on subcontractors prices	%	10.00%	CALCULATED IN SUMMARY						0
010590-0200	General contractor profit Minimum of project total cost	%	10.00%	CALCULATED IN SUMMARY						0
010590-0300	General contractor profit Average of project total	%	15.00%	CALCULATED IN SUMMARY						0
010590-0400	General contractor profit Maximum of project total	%	20.00%	CALCULATED IN SUMMARY						0



**DIVISION 01 : GENERAL REQUIREMENTS:**

CSI CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT SALARY	% SALARY OVERHEAD	UNIT MATERIAL COST	UNIT LABOR COST	UNIT EQ. COST	TOTAL UNIT COST	TOTAL COST
010600	<b>BONDS &amp; GUARANTEES:</b>									0
010620	<b>PERFORMANCE BONDS:</b>									0
	<b>ASSUME 1.25% OF JOB DIRECT COST FOR FINANCING CHARGES &amp; GUARANTEES</b>									
010620-0100	Bid Bond, at 0.0001 of contract value monthly. Example job value 144,000,000 million & bond duration for 6 months.			APPROX. CONTRACT VALUE						0
010620-0200	Financing charges, at 0.012% percent per month for every allowed one million overdraft. Example: contractor overdraw 4.5 million, construction period 36 months, finance charges will be	1.2500%		155,690,000						1,946,125
010620-0220	Financing charges, material letter of credits, at 0.0 % of contract value									0
010620-0400	Performance bond									0
010640	<b>GUARANTEES:</b>									0
010640-0300	Final handover guarantee bond, percent of bond value									0
010700	<b>PERMITS &amp; UTILITY FEES &amp; TAXES:</b>									0
010720	<b>PERMITS:</b>									0
010720-0100	City permit fees if applicable	SQM		NOT APPLICABLE						0
010740	<b>UTILITY CONNECTION FEES:</b>									0
010740-0200	Electrical connection fees if applicable	KVA		PAID BY OWNER				150	150	0
010740-0220	For high voltage, SDECO installed equipment. * If Applicable* Add	KVA		PAID BY OWNER		1,000.00			1,000	0
010740-0300	Water & sewer connection fees if applicable	CUM		PAID BY OWNER						0
010760	<b>TAXES:</b>									0
010760-0100	Taxes for foreign contractors: Percent of Contract Value	Percent	0	NOT APPLICABLE						0
010760-0200	Taxes for joint ventures: Percent of Contract Value pending JV structure. Example 60% foreign, 40% local	Percent	0	NOT APPLICABLE						0
010760-0300	Zakat for local contractors: See DIV. 010046 Main Office Overhead.									0
010800	<b>SUBMITTALS, PHOTOGRAPHS:</b>									0
010820	<b>SUBMITTALS:</b>									0
010820-0100	Shop drawings & material Submittals, See Div. 010116									0
010820-0200	Site area survey, if required, at 150 sq m per 1000 sqm of site area	SQM	10,000					0	0	1,500
010820-0300	Site soil testing, if required. See also DIV. 020120 - Site works	Bore	20						300	6,000
010820-0400	Site topography survey & property line survey	SQM	10,000					1	1	0
010840	<b>PHOTOGRAPHS:</b>									0
010840-0300	Progress photographs: 10 shots, 4 prints size 200x250 mm, average	Month	33					800	800	26,400
010840-0600	Video if requested	Month						300	300	0
010900	<b>QUALITY CONTROL:</b>									0
010905	<b>SITE MANAGEMENT:</b>									0
010905-0100	Construction management, other than contractor staff if required. In this case, contractor management staff Div. 010112 shall be adjusted accordingly. Minimum 5% of contract value	Percent	5.00%	NOT APPLICABLE						0
010905-0120	Construction management, other than contractor staff if required. In this case, contractor management staff Div. 010112 shall be adjusted accordingly. Maximum 7% of contract value	Percent	7.00%	NOT APPLICABLE						0
010905-0100	Contractor Management Staff, See DIV. 010112									0
010905-0300	Project planning management, if outside contractor staff at 0.075 % of contract value	Percent Month		NOT APPLICABLE						0
010925	<b>TESTING:</b>									0
010925-0200	Sample testing at site. See DIV. 010112			LAB INCLUDED						0
010925-0220	Average sample testing, building trades at site and in outside laboratory, at 0.55 % of contract value	Percent	0.55%			155,690,000.00			155,690,000	655,295
010925-0300	Sample testing Outside Laboratory within city limits. Average building materials	Test		LAB INCLUDED			300.00		300	0
010925-0300	Sample testing Outside Laboratory within city limits. Average soil testing materials	Test		NA ROADS CONSTRUCTION			400.00		400	0
010945	<b>FACTORY INSPECTION &amp; TESTING, OUTSIDE KINGDOM:</b>									0
010945-0400	Consultant/owner, attending factory test outside Kingdom, priced according to number of visits & country of destination. Example: Owner Repr., Engineer & contractor representative for 5 days to USA. first class travel. Assume for this trip 15 day trip.	Day Trip		INCLUDED IN SUB-CONTRACTORS		6,000.00			6,000	0
010945-0500	Foreign expertise testing, coming from outside the kingdom, including residency & travel. Example: From USA, travel class, for 3 days visit, assume travel time days.	Day Trip		INCLUDED IN SUB-CONTRACTORS		13,008.00			13,008	0
010965	<b>FACTORY INSPECTION &amp; TESTING, IN KINGDOM:</b>									0
010965-0400	Owner/Consultant attending factory test in Kingdom, to be priced according to number of visits & City of destination.	Trip		INCLUDED IN SUB-CONTRACTORS						0
011100	<b>INDIRECT RUNNING OVERHEAD EXPENSES:</b>									0
011205	<b>CONTRACTOR MAIN OFFICE OH EXPENSES:</b>									0
	<b>ANNUAL TURNOVER</b>									
011205-0100	Accounting/Legal & data processing, average percent of annual TO	% OF TO	0.85%			64,870,833.33		64,870,833		551,462
011205-0200	Cars for staff, maintenance, fuel & insurance, average percent of annual TO	% OF TO	0.30%			64,870,833.33		64,870,833		194,613
011205-0300	Engineering & planning department, Salaries, percent of annual TO	% OF TO	2.50%			64,870,833.33		64,870,833		1,621,771
011205-0400	Estimation department, Salaries, average percent of annual TO	% OF TO	0.50%			64,870,833.33		64,870,833		324,354
011205-0500	General Manager Office Salaries, minimum 300000 SR	LOT								0
011205-0520	General Manager Office Salaries, maximum 750000 SR	LOT	750,000							750,000
011205-0600	Procurement department, Salaries, average percent of annual TO	% OF TO	0.50%			64,870,833.33		64,870,833		324,354
011205-0700	Publicity expenses, minimum 50000 SR	LOT				64,870,833.33		64,870,833		0



# **DIVISION 01 - GENERAL REQUIREMENTS:**

CSI CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT SALARY	% SALARY OVERHEAD	UNIT MATERIAL COST	UNIT LABOR COST	UNIT EQ. COST	TOTAL UNIT COST	TOTAL COST
011205-0720	Publicity expenses, maximum 200000 SR	LOT	200,000			64,870,833.33			64,870,833	200,000
011205-0800	Recruitment & qama expenses, staff	% Of TO	0.05%			64,870,833.33			64,870,833	32,435
011205-0900	Rental & utilities, main office, minimum 150000 SR	% Of TO				64,870,833.33			64,870,833	0
011205-0920	Rental & utilities, main office, minimum 750000 SR	% Of TO	750,000			64,870,833.33			64,870,833	750,000
011205-1000	Staff medical insurance, average percent of annual TO	% Of TO	0.40%			64,870,833.33			64,870,833	259,453
011205-1100	Staff incentives & profit sharing, average percent of annual TO	% Of TO	0.70%			64,870,833.33			64,870,833	454,096
011205-1200	Telephone, Fax & telex bills, average percent of annual TO	% Of TO	0.25%			64,870,833.33			64,870,833	162,177
011205-1300	Travel Expenses, staff, average percent of annual TO	% Of TO	0.35%			64,870,833.33			64,870,833	227,046
011205-1400	Zakat expenses, average percent of annual TO	% Of TO	0.02%			64,870,833.33			64,870,833	12,974
011205-1500	Rule of thumb & using above % main office expenses for less than 5M SR annual turnover	% Of TO	15.50%							0
011205-1600	Rule of thumb & using above % main office expenses from 5M To 10M SR annual turnover	% Of TO	12.55%							0
011205-1700	Rule of thumb & using above % main office expenses from 15M to 30M SR annual turnover	% Of TO	9.90%							0
011205-1800	Rule of thumb & using above % main office expenses from 35M to 50M SR annual TO	% Of TO	8.00%							0
011205-1900	Rule of thumb & using above % main office expenses from 65M to 80M SR annual TO	% Of TO	7.50%							
011205-2000	Rule of thumb & using above % main office expenses over 85M SR annual turnover	% Of TO	7.25%							

## **015 MOBILIZATION**

### **015100 CARS:**

01500-0100	Consultant cars, deluxe, Depreciated cost 5 years,	Man Car Month	2					30,000	30,000	60,000
01500-0200	Consultant cars, Medium size, Depreciated cost 5 years	Man Car Month								0
01500-0300	Contractor cars, deluxe, Depreciated cost 5 years	Man Car Month	2					30,000	30,000	60,000
01500-0400	Contractor cars, Medium, Depreciated cost 5 years	Man Car Month	4					22,500	22,500	90,000
01500-0500	Contractor cars, Small, Depreciated cost 5 years	Man Car Month	3					15,000	15,000	45,000
01500-0600	Contractor workshop & plants cars, Pick-up, Depreciated cost 5 years	Man Car Month	3					26,250	26,250	78,750

### **015200 TEMPORARY CONSTRUCTIONS:**

015205	ACCESS ROAD & RAMPS:	ASSUMED								0
015200-0200	Access road, including clearing 100 mm compaction & 200 mm fill	SQM					1.50	4	5	0
015200-0300	Access road, including clearing 100 mm compaction & 200 mm selected fill	SQM	500			6.00	1.50	4	11	5,500
015200-0400	Access road, including clearing 100 mm compaction & 200 mm fill with 1.5 Kg prime asphalt coat & 025 kg/m2 asphalt tack coat	SQM				9.00	2.00	4	15	0
015200-0500	Access road, including clearing 100 mm compaction & 200 mm fill with 1.5 Kg prime asphalt coat, 0.25 kg/m2 asphalt tack coat & 50 mm asphalt	SQM				40.00	3.00	5	48	0
015200-0600	Access road, periodic maintenance	Month SQM	18,000			1.50	0.995	2	4	71,910
015200-0700	Dirt surface parking, including clearing & 200 mm fill layer	Car	-						300	0
015200-0800	Dirt, surface parking periodic maintenance	Month Car	-						160	0
015200-0900	Sheltered dirt parking space	Car	14						2,300	32,200
015200-1000	Sheltered asphalt parking space	Car	-						2,860	0
015200-1100	Access ramp, concrete	SQM	60						60	3,600
015200-1200	Access ramp, gravel fill, 100 mm deep	SQM							8	0

### **015210 CONSULTING/OWNER ENGINEER SITE OFFICES:**

015210-0100	Offices, Masonry & concrete deck, based on 15 SQM per person of the staff, including meeting rooms & office support area, 20 % material savings value	Man Month	-			258.33	63.75		352	0
015210-0200	Offices, Masonry & corrugated deck, based on 15 SQM per person of the staff, including meeting rooms & office support area, 25 % material savings value	Man Month	-			218.75	72.92		292	0
015210-0300	Offices, Prefabricated units, 15 SQM per person including meeting rooms, offices & support areas, Depreciated at 60 months	Man Month	576			200.00	20.83	5	226	130,078
015210-0400	Office computer network, Depreciated cost at 36 months, Monthly consider 8 stations	Month station	268			134.58	5.55	0	140	40,438
015210-0500	Office equipment, Copiers, typewriters, etc., Depreciated cost at 36 months, Monthly	Month	36			1,666.66	0.69	1	1,666	60,049
015210-0600	Office software, depreciated cost at 36 months	Month	36						1,250	45,000
015210-0700	Office standard furniture per person, Depreciated cost at 36 months, Monthly	Man Month	576			41.66	0.55	0	43	24,555

### **015215 CONSTRUCTION WORKSHOPS & PLANT DEPRECIATED COST AT 36 MONTHS**

015215-0100	Equipment maintenance workshop, minimum of 16 SQM for jobs up to 10MSR, including tools, maint. equipment & employees facilities	Month				142.22	55.55	135	333	0
015215-0200	Equipment maintenance workshop, 1 SQM/MSR for jobs 15MSR to 50 MSR, including tools, maintenance equipment & employees facilities. Example for project of 45 MSR & 36 months cost	Month SQM MSR				9.77	3.82	18	31	0
015215-0300	Equipment maintenance workshop, 0.75 SQM/MSR for jobs 65MSR to 85 MSR, including tools, maintenance equipment & employees facilities	Month SQM MSR				9.78	3.82	18	31	0
015215-0400	Equipment maintenance workshop, 0.65 SQM/MSR for job over 100 MSR including tools, maintenance equipment & employees facilities, Example, contract value 225 MSR	Month SQM MSR	101			9.78	3.82	18	31	3,158
015215-0500	Concrete Batching plant, remote sites, Assume 0.025 SQM per GSQM of build - up area, Eq. cost depreciated for 72 months	Month SQM MSR		NOT APPLICABLE		1.00	0.14	6	7	0
015215-0600	Construction workshop, for emergency generators at 20 sqm/generators shelter included with generators depreciated at 36 months	Month SQM	720			4.44	2.75	73	60	57,698
015215-0700	Joinery & steel workshop, minimum 40 m2, or 1.5 m2 per 1000 m2 build up area, plus 60 m2 open area, Example For 36 months construction period	Month SQM GSQM	2,500			4.44	2.75	10	16	44,234







# **DIVISION 01 : GENERAL REQUIREMENTS:**

CSI CODE	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT SALARY	% SALARY OVERHEAD	UNIT MATERIAL COST	UNIT LABOR COST	UNIT EQ. COST	TOTAL UNIT COST	TOTAL COST
015235-0100	Barbed wire, barrel reflectorized	EA							200	0
015235-0200	Barbed wire, barrel, with flashers	EA	10						325	3,250
015235-0300	Barbed wire, barrel, with steady burn light	EA							350	0
015235-0400	Fence, wood and corrugated steel, 2 meters high. Quantity based on lot size. 25% salvage material cost. Example: For a site lot area 10,000 SQM, Fence/Fence Approx.	LM				30.00	10.00		40	0
015235-0500	Fence, chain link including steel angles, 2 meters high. 25 % salvage on material cost. Quantity based on lot size. Same Example Line 015235-0400	LM	500			45.00	15.00		60	30,000
015235-0600	Fence gate, 6m wide	EA	1						1,500	1,500
015235-0700	Fence gate, 1m wide	EA	2						450	900
015235-0800	Fence vehicle gate, with 2 manual arm reflectorized barrier	EA	1						2,000	2,000
015235-0900	Guard house Kiosk, masonry block	Man Month	106			9.79	3.88		14	1,476
<b>015240</b>	<b>NOTICE BOARDS &amp; SIGNS:</b>									
015240-0100	Project Main Sign, approx. 3m x 2 m. Assume at least 5 signs per site unless shown otherwise.	EA	3						4,200	12,600
015240-0200	Direction & notice signs. Quantity depends on project land size. Assume as minimum requirement 5 signs, or assume 1 sign each 10000 SQM for large lot area sites. Material salvage value 25 %	EA	5						40	200
015240-0300	Traffic signs. Quantity depends on project land size. Assume minimum of 6 signs or 1 sign every 5000 m2 uncovered area of the site lot area. Material salvage value 25%	EA	6						69	413
015240-0400	Warning signs. Quantity depends on project size. Assume 1 sign every 1000 m2 of build up area and temporary facilities areas. Assume also 1 sign every 5000 m2 of site lot area. Material salvage value 25 %	EA	48						125	6,056
<b>015250</b>	<b>SITE CLEANING</b>									
015250-0100	Cleaning & levelling mobilization site, per SQM of mobilization camp area	SQM	5,600						2	11,200
<b>015260</b>	<b>SITE SECURITY MEASURES:</b>									
015260-0100	Fire extinguishers, stores, offices, campuses & construction area, depends on project size. Assume minimum of 1 every 500 SQM area.	EA	90						225	20,250
015260-0200	Water Tanker for fire fighting including operation & maintenance	Month	36						6,000	216,000
015260-0300	Sand buckets, construction area. Depends on project size	EA	12						75	875
015260-0400	Security guards, depends on project size, minimum of 3 per site included in section 010112, Field Staff	Man Month		550.00	107.80%					
<b>015300</b>	<b>TEMPORARY UTILITIES:</b>									0
015300-0100	Temporary emergency generators depends on site power consumption needs. Assume 0.75 KW per person. To cover all site temporary facilities loads & spare power depreciated monthly. Example: a site of 500 persons, for 36 months construction period requires	Man Month KW	20,250			15.75	20.00	2	38	764,436
015300-0200	Temporary electrical distribution, depends on site area & distributed power based on 0.75 KW per Person. For site areas less than 100,000 SQM, 30 % Material salvage value. For same Example Line 015300-0100	Man KW	565			315.00	100.00		415	233,438
015300-0220	Temporary electrical distribution, depends on site area & distributed power based on 0.75 KW per Person. For site areas more than 100,000 m2 & less than 300,000 m2. Material cost depreciated. For same Example Line 015300-0100	Man KW				455.00	150.00		605	0
015300-0240	Temporary electrical distribution, depends on site area & distributed power based on 0.75 KW per Person. For site areas more than 400,000 m2. Material cost depreciated. For same Example Line 015300-0100	Man KW				577.50	180.00		758	0
015300-0300	Temporary septic tank, per person of manpower (MP) force. Assume 0.1 Cum per person. Capacity based on 15 days storage	CUM Person	1,049			160.00	30.00		190	199,241
015300-0400	Temporary sewer lines, per CUM Discharge and mobilization camp site, for campuses area site up to 5000 m2 & 200 persons approx.	CUM Person				250	104		354	0
015300-0420	Temporary sewer lines, per CUM Discharge and mobilization camp site, for campuses area site more than 5000 m2 & as example 500 persons approx.	CUM Person	1,049			110	83		193	202,387
015300-0500	Temporary water storage tanks for Campus, assume 0.15 Cum per day per person of MP force, for 2 days storage	CUM Person	210			285.00	70.00	20	355	74,453
015300-0600	Temporary water lines, per CUM of Distributed water and mobilization campuses site area. Example for site area up to 5000 m2 & 200 persons	CUM Person							950	0
015300-0600	Temporary water lines, per CUM of Distributed water and mobilization campuses site area. Example for site area more than 5000 m2 & 500 persons	CUM Person	210						521	109,298
015300-0800	Temporary water storage for construction, Assume 2 CUM steel tank per 1500 SQM of build-up Area. material cost depreciated. Example: required for 15,000 m2 build-up area, 10 tanks required	M3 GSQM	62							0
015300-0900	GSM telephone sets for Senior contractor construction staff	Man Month	72						222	16,000
015300-1000	Temporary Telephone & fax lines including wiring. 25 % salvage value	Line	12						650	10,200
<b>015400</b>	<b>CONSTRUCTION AID</b>									
<b>015405</b>	<b>SAFETY:</b>									0
015405-0100	Safety net, 100 mm mesh with supports, average	SQM	458						50	22,912
015405-0500	Weather Station, average depreciated cost with 30 % material salvage, monthly	Month	18						408	7,350
<b>015440</b>	<b>SCAFFOLDING: 30% MATERIAL SALVAGE VALUE</b>									0
015440-0200	Scaffolding exterior wall, steel/tubular, depreciated SQM cost. Quantity depends on area of exterior walls & building shape & height. Complete with framing, catwalks, bridges, ladders	SQM Month	104,900			8.24	0.92		9	960,534
015440-0300	Scaffolding interior wall up to 5 meter high, tubular steel, including planks, supports, base & accessories	SQM Month	1,080			4.76	0.56		5	5,744
015440-0320	Scaffolding, Hand winch for masons, 30 meter long, 9 meter high	EA	1						583	583
015440-0400	Staging swing, 225 Kg capacity, 0.6 m wide, 7 m long, hand operated, 20 m steel cable type, depreciated cost. Example erected for 10 months	Month	10			350.00	50.00	60	460	4,800
015440-0500	Staging swing lightweight, 100 Kg capacity, 0.6 m wide, 7 m long, hand operated, 60 m steel cable type, depreciated cost. Example erected for 18 months	Month				281.94	22.22	27	331	0
015440-0600	Staging swing lightweight, 100 Kg capacity, 0.6 m wide, 7 m long, powered electric operation, 90 m steel cable type, depreciated cost. Example erected for 24 months	Month		NOT APPLICABLE		675.00	33.33	50	658	0
<b>015500</b>	<b>CONSTRUCTION EQUIPMENT:</b>									0
<b>015520</b>	<b>CONSTRUCTION EQUIP. RENTAL OR OWN</b>									0
015520-0100	Construction equipment rental See Div. 016406 thru 016490									0





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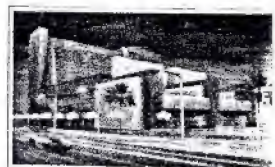
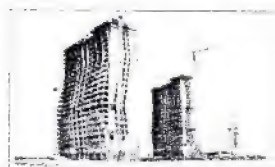
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# Division 2

## Site Works

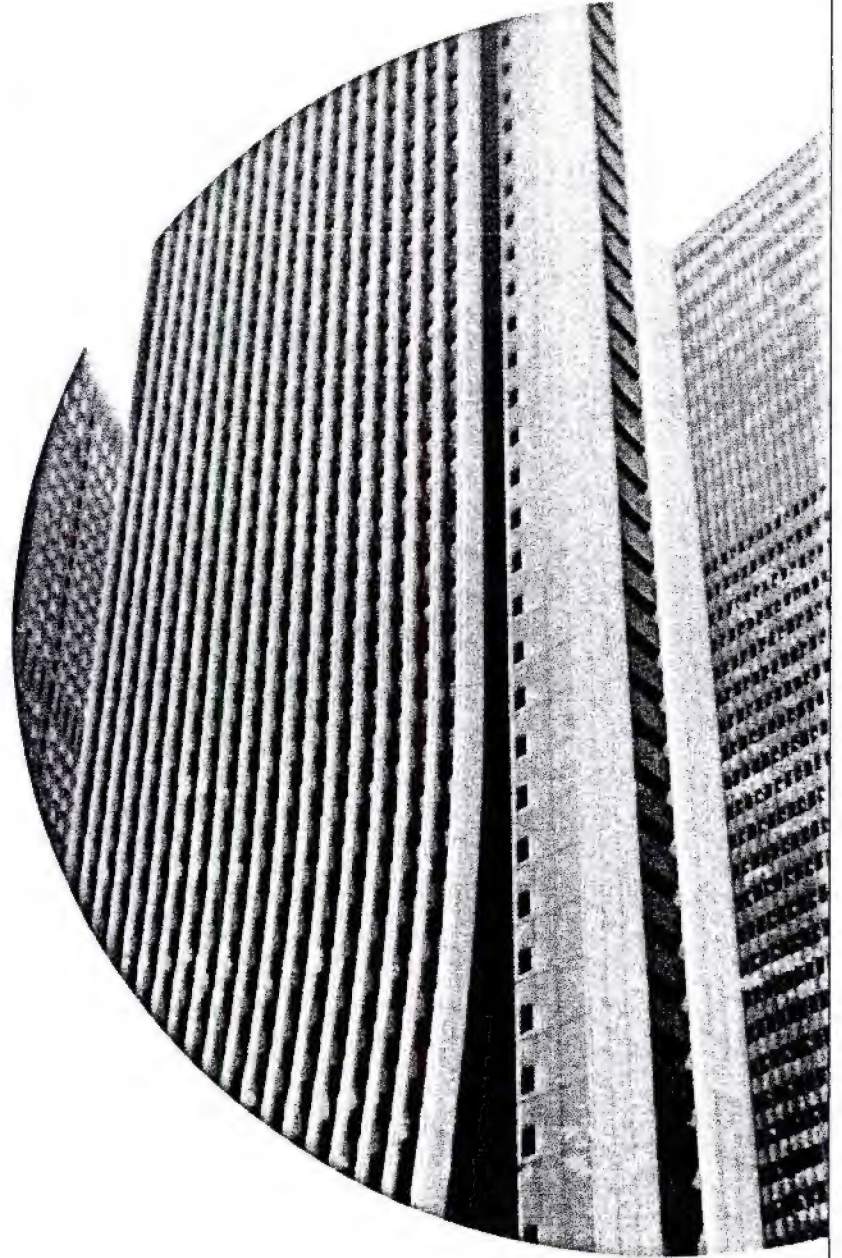


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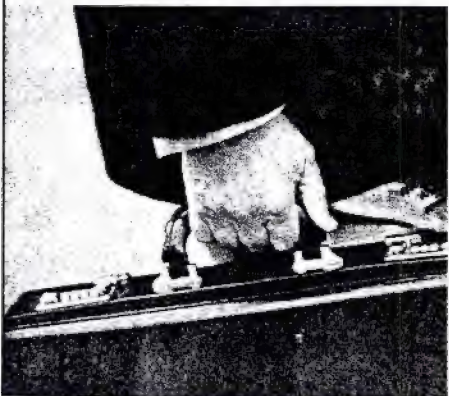
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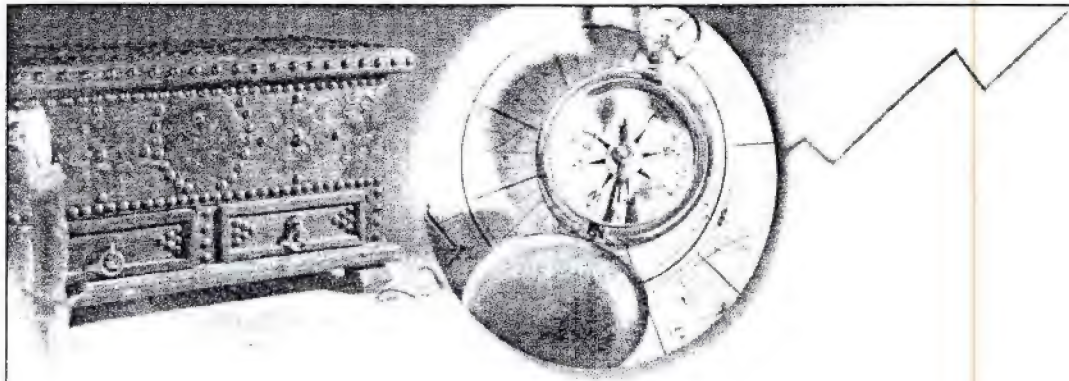
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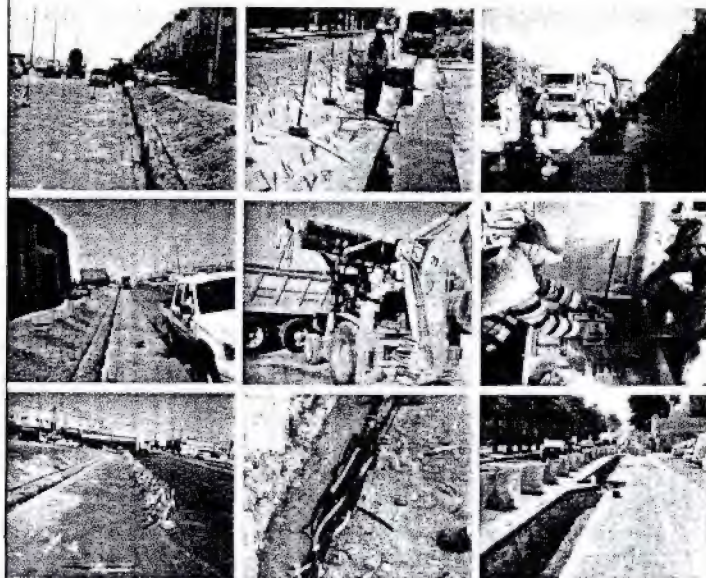
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## Division 2

# Site Work

### Estimating Tips

#### 020 Sub-surface Investigation & Demolition

Estimator shall obtain all available information concerning soil type. A site investigation is mandatory to reveal all site conditions, looking in particular for hazardous waste, stream beds, prior dumping, site restrictions and access, flood plains and all other factors that would strongly influence construction methods and costs. As any ground penetration has some risks, test pits, and knowledge gathered tend to control such risk.

Demolition usually is executed by speciality contractors if explosives method is involved. Estimator shall consider in costing building demolition all factors that may affect the cost such as work space, rubbish handling, temporary bracing or shoring, dust control, security measures, hauling distance and costs of any required permits.

#### 021 Site Preparation & Excavation Support

Site visit will determine the extent and scope of work required for the site preparation. The estimator shall focus on plantation at site if any, dumped material, need for haul roads, access, storage of material, limited site size and access problems or any forced restrictions that may result in lower productivity rates, estimator shall also consider all security measures for isolated sites to prevent theft and damage by adding fencing or increase the number of guards.

#### 022 Earthwork

As there are many factors that affect productivity rates of earthworks, no productivity rate shall be considered as 100% accurate. This book includes many items concerning earthworks in different types of soils as well as different type of equipments. We did our best to be very close to an accurate estimate by considering most of the factors that affect this operation. When preparing the bid, estimators shall focus on the following major factors: soil type, water content, dewatering, any required bracing or sheeting to excavation banks, hauling distance. Estimator shall choose the proper economical piece of equipment having best efficiency verses lower cost. Estimator shall be aware of the following factors that affect equipment efficiency, productivity and costs.

Swing angle of equipment - Ideal is 45 degree, for 90 degree swing efficiency could reach to 80% while for 120 degree it may reach 70%.

*Cut Depth:* Choose the proper equipment to do job accordingly.

*Soil Type:* Items in the book highlights this factor, Ideal equipment efficiency is for a sandy soil, if the soil is sand and gravel equipment efficiency is reduced to 90%, while efficiency could be as low as 20% for a poorly blasted rock.

*Degree of Equipment Operation:* Time of equipment service, operator activity, weather factors, project restrictions, etc., are some key factors affecting efficiency. Stockpile Distance and length of drag as well as maneuvering conditions. Site topography and volume of work Excavation management planning. Others such as specification control requirements, actual slope requirements, distress means and maximum allowable slope and slope configuration requirements. All productivity rates in this book are based on a bank measure.

#### 025 Paving & Surfacing

Good management planning for placing the base course and asphalt layers will result in cost savings for any repair work due to the climate conditions.

#### 026 Piped Utilities

Good planning for proper timing of piped utility excavation will result in the best productivity for other construction items. Contractor must always keep an easy access to different parts of site, material flow and labor movement to maintain good productivity. Contractor shall carefully study the site topography, buildings distribution, planned utilities & investigate all discrepancies that may affect productivity and costs.

#### 029 Landscaping

Establishing a work plan, scheduled properly will reduce maintenance cost and will guarantee better growth of plants. Contractor shall focus on soil conditions and plant watering requirements as well as the maintenance staff required. Maintenance cannot be excluded from any project, because of different plants specified to be planted in different seasons. Contractor must consider all types of plants specified, scheduled planting plan, needed maintenance time, staff and watering requirements during the construction period.



**Division 02 : SITE WORK**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D.O. MIN.	D.O. MAX.	D.O. AVRQ	AVRG. E.H.
<b>020</b>	<b>SUBSURFACE INVESTIGATION &amp; DEMOLITION</b>						
<b>020 120</b>	<b>STANDARD PENETRATION TESTS</b>						
<b>020 123</b>	<b>BORING:</b>						
020 123-0100	Boring job,mobilization & demobilization,average 40 km within city limits	Job	1.00 Skilled Foreman 2.00 Building Laborers 1.00 Light Equip. Driver 1.00 Flat Truck W/Auger 1.00 Truck 3 Ton	2.00	2.00	2.00	8.000
020 123-0300	Boring, auger holes in earth, no sample, 100 mm	LM		16.00	18.00	17.00	1.000
020 123-0400	Cased boring in earth, with samples, 65 mm			13.00	15.00	14.00	1.231
020 123-0500	Cased boring in earth, with samples, 100 mm			8.00	9.00	8.50	2.000
020 123-0600	Drilling in rock no sampling		1.00 Skilled Foreman 1.00 Building Laborer 1.00 Light Equip. Driver 1.00 Crawler Type Drill 100 mm 1.00 Air Compressor 600 CFM with 15m Air Hose 75 mm dia	9.00	10.00	9.50	1.778
020 123-0700	Drilling in rock with / casing & Sampling			7.50	9.00	8.25	2.133
<b>020 125</b>	<b>DRILLING, CORE:</b>						
020 125-0100	Drilling core, in 200 mm concrete slab, including layout & setup, diameter 25 mm	EA	0.125 Skilled Foreman 2.000 Skilled Laborer 1.000 Laborer 1.000 Core Drill Large	42.50	49.00	45.75	0.188
020 125-0150	Drilling core, in 200 mm concrete slab, including layout & setup, diameter 25 mm			27.73	32.00	29.87	0.288
020 125-0300	Drilling core, in 150 mm concrete slab, including layout & setup, diameter 76 mm			37.22	43.00	40.11	0.215
020 125-0750	Drilling core, in 200 mm concrete slab, including layout & setup, diameter 150 mm			25.71	30.00	27.86	0.311
020 125-0950	Drilling core, in 200 mm concrete slab, including layout & setup, diameter 200 mm			23.42	27.00	25.21	0.342
020 125-1100	Drilling core, in 150 mm concrete slab, including layout & setup, diameter 250 mm			26.52	33.00	30.76	0.281
020 125-1110	Drilling core, in 200 mm concrete slab, including layout & setup, diameter 250 mm			20.23	23.00	21.62	0.395
020 125-1200	Drilling core, in 200 mm concrete slab, including layout & setup, diameter 400 mm			9.77	11.00	10.39	0.819
020 125-1790	Core drilling in 200 mm prestressed hollow core plank, including layout & setup, diameter 25mm			36.00	41.00	38.50	0.222
020 125-1810	Core drilling in 200 mm prestressed hollow core plank, including layout & setup, diameter 76 mm			30.00	35.00	32.50	0.267
020 125-1850	Core drilling in 200 mm prestressed hollow core plank, including layout & setup, diameter 150 mm			24.00	28.00	26.00	0.333
020 125-1850	For core drilling horizontally add to above items.						15%
<b>020 128</b>	<b>TEST PITS:</b>						
020 128-0100	Test Pit, Hand Digging, Light Soil	CUM	1.00 Common Laborer 1.00 Tool Set	3.50	4.00	3.75	2.286
020 128-0120	Test Pit, Hand Digging, Heavy Soil	-		1.75	2.00	1.88	4.571
<b>020 550</b>	<b>SITE DEMOLITION</b>						
<b>020 554</b>	<b>SITE DEMOLITION:</b>						
020 554-0020	Remove masonry existing catch basin or manhole, up to 3 m deep	EA	0.125 Labor Foreman 2.000 Building Laborers 1.000 Light Equip. Operator 1.000 Backhoe loader, 50 HP	4.50	5.00	4.75	1.778
020 554-0080	Remove reinforced concrete existing catch basin or manhole, up to 3 m deep			3.50	4.00	3.75	2.286
020 554-0130	Store catch basin or manhole cover at site storage			14.00	16.00	15.00	0.571
020 554-0700	Remove only chain link, 3 meters high			175.00	201.00	188.00	0.046
020 554-0900	Remove fire hydrants, thrust blocks and sore at site.		0.125 Labor Foreman 2.000 Plumbers 1.000 Equip. operator 1.000 Common laborer 1.000 Backhoe 50 HP 2.000 Tool sets	4.00	5.00	4.50	6.000
020 554-1400	Remove stone wall with mortar, disposal piled on Site	CUM	0.250 Labor Foreman 4.000 Building Laborers 1.000 Equip. operator, light 1.000 Equip. operator, heavy 1.000 Air compressor, 250CFM w/ 4 air Tools & Hoses 1.000 Mechanic 1.000 F.E Loader, 1.9 MG	20.00	23.00	21.50	0.800
020 554-1710	Pavement Removal, Bituminous; 75 mm Thick			175.00	201.00	188.00	0.091
020 554-1900	Remove concrete pavement, 100mm thick; mesh reinforced			97.50	112.00	104.75	0.164
020 554-1900	Remove concrete pavement, 150mm thick; mesh reinforced			65.00	75.00	70.00	0.246
020 554-1900	Remove concrete pavement, 200mm thick; mesh reinforced			48.75	56.00	52.38	0.328

## Division 02 : SITE WORK

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D.O. MIN.	D.O. MAX.	D.O. AVRG	AVRG. E.H.
020 554-2200	Remove concrete pavement, 200 mm To 600 mm thick, reinforced	↓	↓	4.88	6.00	5.44	3.279
020 554-2500	Remove curbs pavement, concrete, reinforced	LM	0.125 Labor Foreman 2.000 Building Laborers 1.000 Light equip. operator 1.000 Backhoe, loader 50 HP	60.00	69.00	64.50	0.133
020 554-2600	Remove curbs, granite	LM	0.125 Labor Foreman 2.000 Building Laborers 1.000 Light equip. operator 1.000 Backhoe, loader 50 HP	100.00	115.00	107.50	0.080
020 554-2900	Pipe removal, concrete, no excavation, 600 mm	↓	↓	30.00	35.00	32.50	0.267
020 554-3500	Railroad track removal, ties & track	↓	↓	12.00	14.00	13.00	0.667
020 554-5500	For congested sites or small quantities, removal add to above items	↓	↓	1.80	2.00	1.90	4.444
020 554-5600	Disposal of removed material 32 KM round trip	CUM	0.125 Equip. operator 1.000 Truck Driver 0.125 Shovel, 1.7 M3 1.000 Dump Truck, 10 Ton	28.00	32.00	30.00	0.321
<b>020 600</b>	<b>BUILDING DEMOLITION</b>						
<b>020 604</b>	<b>BUILDING DEMOLITION:</b>						
020 604-0012	Demolition large urban steel buildings including 32 KM haul	CUM	0.25 Labor Foreman 3.00 Building Laborers 2.00 Equipment Operator 2.00 Truck Drivers 1.00 Hydraulic Crane 23 Ton 1.00 F.E. Loader, T.M. 1.91 CUM 2.00 Dump Trucks 10 Ton	525.00	604.00	564.50	0.061
020 604-0050	Demolition large urban concrete buildings including 32 KM haul	↓	↓	375.00	431.00	403.00	0.085
020 604-0500	Small buildings, no salvage included - steel bldg	↓	↓	420.00	483.00	451.50	0.076
020 604-0600	Small buildings, no salvage included concrete building	↓	↓	320.00	368.00	344.00	0.100
020 604-0800	Small buildings, no salvage included wood building	↓	↓	352.00	405.00	378.50	0.091
<b>020 616</b>	<b>EXPLOSIVE DEMOLITION:</b>						
020 616-0010	Explosive demolition, not including disposal haul to 32 km - concrete building	CUM	0.25 Skilled Foreman 5.00 Skilled Workers 2.00 Building Laborers 1.00 Equipment operator 2.00 Heavy Truck Drivers 1.00 F.E. Loader, T.M. 2 CUM 2.00 Dump trucks 16 ton	450.00	518.00	484.00	0.053
020 616-0200	Explosive demolition, not including disposal haul to 32 km - masonry building	↓	↓	450.00	518.00	484.00	0.053
020 616-0420	Disposal of removed material 60 KM round trip	↓	↓	14.00	161.00	87.50	0.643
<b>020 700</b>	<b>SELECTIVE DEMOLITION</b>						
<b>020 702</b>	<b>CEILING DEMOLITION:</b>						
020 702-1000	Demolition ceiling plaster on concrete ceiling	SQM	2.00 Laborers 2.00 Power Tools	45.00	52.00	48.50	0.356
<b>020 706</b>	<b>DOOR DEMOLITION:</b>						
020 706-0220	Demolition exterior door, in masonry wall, double leaf 44 mm, 1.8 m X 2.1 m	EA	1.00 Laborer 1.00 Tool Set	5.00	6.00	5.50	1.600
020 706-0240	Demolition hollow metal, exterior door, in masonry wall, double leaf 44 mm, 1.8m X 2.1m	↓	↓	3.00	3.00	3.00	2.667
020 706-3400	Demolition Roll-up or overhead door	↓	↓	1.60	2.00	1.80	5.000
020 706-3600	Demolition Revolving door, 1.2 meter	↓	↓	0.80	1.00	0.90	10.000
<b>020 708</b>	<b>ELECTRICAL DEMOLITION:</b>						
020 708-0160	Demolition of galvanized rigid steel conduit, exposed 50 mm to 100 mm	LM	1.00 Electrician 1.00 Tool Set	40.00	46.00	43.00	0.200
020 708-0609	Demolition copper busduct 3000A	↓	↓	6.00	7.00	6.50	2.667
020 708-1570	Demolition transformer, 3phase 750 kVA	↓	↓	0.50	1.00	0.75	16.000
020 708-2260	Removal fluorescent lighting fixture, 600 mm x 1200 mm, 4 lamps	↓	↓	15.00	17.00	16.00	0.533
<b>020 714</b>	<b>FRAMING AND CONCRETE DEMOLITION:</b>						
020 714-1060	Concrete Beams, or columns, reinforced, disposal removal to 32 km off site	CUM	0.25 Labor Foreman 3.00 Building Laborers 2.00 Equipment Operator 2.00 Truck Drivers 1.00 Hydraulic Crane 23 Ton 1.00 F.E. Loader, T.M. 1.91 CUM 2.00 Dump Trucks 10 Ton	525.00	604.00	564.50	0.061
020 714-2080	Steel framing beam, columns, girders, stored on site storage	TON	↓	8.00	9.00	8.50	4.000
<b>020 716</b>	<b>GUTTING:</b>						



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CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D.O. MIN.	D.O. MAX.	D.O. AVR.G.	AVRG. E.H.
020 716-0500	Gutting building interior,including disposal,residential buildings,average	SQM	0.125 Labor Foreman 2.000 Building Laborers 1.000 Truck Driver 1.000 Dump Truck 10 Ton	25.00	29.00	27.00	0.320
020 716-0600	Gutting building interior,including disposal,commercial buildings,average	"	"	20.00	23.00	21.50	0.400
<b>020 718 HVAC DEMOLITION:</b>							
020 718-0150	Demolition air conditioning package unit,rooftop	EA	0.125 Skilled Foreman 2.000 Steamfitters 1.000 Laborer 2.000 Tool Sets	0.25	0.30	0.28	64.000
020 718-1500	Demolition ductwork, 750 mm high, 900 mm wide	LM	1.000 Laborer 1.000 Tool Set	15.00	17.00	16.00	0.533
020 718-1540	Demolition ductwork, 750 mm high, 1.8 m wide	"	"	12.00	14.00	13.00	0.667
<b>020 724 PLUMBING DEMOLITION:</b>							
020 724-1100	Demolition bath tub,cast iron with average of 3 m piping	EA	0.125 Skilled Foreman 1.000 Plumber 1.000 Laborer 1.000 Tool Set	6.00	7.00	6.50	1.333
020 724-1200	Demolition lavatory wall hung with 3 m average piping	"	"	14.00	16.00	15.00	0.571
020 724-1420	Demolition water closet wall hung with 3 m average piping	"	"	10.00	12.00	11.00	0.800
020 724-2000	Demolition piping upto 50 mm	LM	0.125 Skilled Foreman 2.00 Plumber 1.00 Laborer 2.00 Tool Sets	100.00	115.00	107.50	0.160
020 724-2100	Demolition piping 50 - 200 mm	"	"	42.00	48.00	45.00	0.381
<b>020 728 SAW CUTTING:</b>							
020 728-0020	Saw cutting,asphalt over 300 LM; 75 mm deep	LM	0.125 Foreman 1.000 Equip. Operator 1.000 Truck Driver 1.000 Truck 3 Ton 1.000 Concrete Saw 1.000 Water Tanker	200.00	230.00	215.00	0.120
020 728-0400	Saw cutting concrete slab ,with mesh reinforcement. per 25 mm depth	"	"	250.00	288.00	269.00	0.096
020 728-0800	Saw cutting,concrete wall ,reinforced per 25 mm depth	"	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Building Laborer 1.000 Concrete Saw	45.00	52.00	48.50	0.178
<b>020 750 CONCRETE REMOVAL</b>							
<b>020 754 FOOTINGS AND FOUNDATIONS DEMOLITION:</b>							
020 754-1000	Demolition of reinforced concrete footing	CUM	0.250 Labor Foreman 4.000 Building Laborers 1.000 Equip. operator, light 1.000 Equip. operator, heavy 1.000 Air compressor, 250 CFM w/ 4 air Tools & Hoses 1.000 Mechanic 1.000 F.E Loader, 1.9 M3	18.00	21.00	19.50	0.889
020 754-1220	Demolition of concrete footing with heavy reinforcement	"	"	12.00	14.00	13.00	1.333
<b>020 880 REMOVAL OF UNDERGROUND STORAGE TANKS:</b>							
020 880-0120	Remove fuel tank including excavation & loading on trailer,capacity upto 8000 gallon	EA	0.125 Labor Foreman 4.000 Laborers 1.000 Equip. Operator 1.000 Backhoe Loader, 60HP	3.00	3.00	3.00	2.667
020 880-0130	Remove fuel tank including excavation & loading on trailer,capacity 8001 to 11,000 gallon	"	"	2.00	2.00	2.00	4.000
<b>021 SITE PREPARATION:</b>							
<b>021 100 SITE CLEARING</b>							
<b>021 144 STRIPPING:</b>							
021 144-0010	Stripping top soil to 150 mm deep, and stock piling, sandy loam soil, with 200 HP dozer, normal conditions	CUM	1.00 Equip. operator 1.00 Building Laborer 1.00 Dozer, 200 HP	1,400.00	1,610.00	1,505.00	0.006
021 144-0200	Stripping top soil to 150 mm deep, and stockpiling, sandy loam soil, with 200 HP dozer, adverse conditions	"	"	700.00	805.00	752.50	0.011
021 144-0200	Stripping top soil to 150 mm deep, and stockpiling, clay dry and soft soil, with 200 HP dozer normal conditions	"	"	1,000.00	1,150.00	1,075.00	0.008
021 144-0600	Stripping top soil to 150 mm deep, and stockpiling, clay dry and soft soil, with 200 HP dozer, adverse conditions.	"	"	500.00	575.00	537.50	0.016
021 144-0200	Stripping top soil to 150mm deep, and stockpiling, very hard soil, with 320 HP dozer, adverse conditions.	"	"	800.00	920.00	860.00	0.010
<b>021 200 STRUCTURE MOVING</b>							
<b>021 204 MOVING BUILDINGS:</b>							
021 204-0040	Move & set on ready foundation,prefabricated building 7.3 m wide,12 m long	EA	0.125 Labor Foreman 1.000 Equip. operator 4.000 Building Laborers 1.000 Crane 23 Ton 1.000 Platform Trailer	1.00	1.00	1.00	16.000

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CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D.O. MIN.	D.O. MAX.	D.O. AVRG	AVRG. E.H.
021 400	DEWATERING						
021 404	DEWATERING:						
021 404-0100	Excavate drainage trench, 600 mm wide, 900 mm deep, with backhoe loader	LM	1.00 Equip. Oper. (med.) 1.00 Laborer 1.00 Backhoe Loader, 35 kW	120.00	138.00	129.00	0.067
021 404-1400	Re-lay corrugated metal pipe, including excavation 1m deep, 450 mm diameter (18")		0.125 Labor Foreman 2.000 Building Laborer 1.000 Light Equip. Operator 1.000 Backhoe loader, 50 HP	50.00	58.00	54.00	0.160
021 404-1700	Lay, corrugated metal pipe, including 300 mm collar gravel and 1 m deep excavation, pipe 300 mm diameter, 16 ga			30.00	35.00	32.50	0.267
021 404-1900	Lay, corrugated metal pipe, including 300 mm collar gravel and 1 m deep excavation, pipe 450 mm diameter, 16 ga			24.00	28.00	26.00	0.333
021 404-2000	Lay, corrugated metal pipe, including 300 mm collar gravel and 1 m deep excavation, pipe 600 mm diameter, 16 ga			20.00	23.00	21.50	0.400
021 404-2100	Sump hole pit construction, including excavation and gravel	CUM		31.58	36.00	33.79	0.253
021 440	WELLPOINTS						
021 444	WELLPOINTS:						
021 444-0400	Wellpoints, pump operation, 4 shifts, 6 hours each, 24 hours daily	DAY	0.500 Skilled Foreman 4.000 Skilled Workers 1.000 Tools Set	1.00	1.00	1.00	8.000
021 444-0700	Complete well point installation, including first month operation for 24 hrs daily, fuel, 30 m long header 150 mm dia., at 1.5 m o.c., ground water level at 2.4 m, excavation depth 8.5 meters	LM HEADER	0.500 Skilled Foreman 4.000 Skilled Workers 0.500 Truck Driver 1.000 Common laborer 0.500 Auger Drill 0.500 Bed Truck 0.500 Tools Set	1.35	2.00	1.68	8.889
021 444-1000	Complete well point installation, including first month operation for 24 hrs daily, fuel, 80 m long header 200 mm dia., well points 50 mm dia, at 1.5 m O.C, ground water level at 2.4 m, excavation depth 8.5 meters			2.76	3.00	2.88	4.348
021 444-1300	Complete well point installation, including first month operation for 24 hrs daily, fuel, 160 m long header 200 mm dia., well points 50 mm dia, at 1.5 m O.C, ground water level at 2.4 m, excavation depth 8.5 meters			3.91	5.00	4.46	6.138
021 444-1500	Complete well point installation, including first month operation for 24 hrs daily, fuel, 220 m long header 200 mm dia., well points 50 mm dia, at 1.5 m O.C, ground water level at 2.4 m, excavation depth 8.5 meters			4.46	5.00	4.73	5.381
021 444-1600	Complete well point installation, including first month operation for 24 hrs daily, fuel, 300 m long header 200 mm dia., well points 50 mm dia, at 1.5 m O.C, ground water level at 2.4 m, excavation depth 8.5 meters			4.01	5.00	4.51	5.985
021 610	SHEET PILING						
021 614	SHEET PILING:						
021 614-0300	Sheet piling steel, including wales, 130 kg/m2, 6m deep excavation, left in place	MET.TON	0.500 Skilled Foreman 4.000 Pile Drivers 1.000 Equip. Oper. Light 1.000 Equip. Oper. Heavy 1.000 Crane, 36 metric ton 0.825 Vibratory Hammer & Gen. 0.5000 Bed Truck	9.12	11.00	10.06	1.864
021 614-0400	Sheet piling steel, including wales, 130 kg/m2, 6m deep excavation, including pull out			7.16	8.00	7.58	2.374
021 614-0600	Sheet piling steel, including wales, 156 kg/m2, 7.6m deep excavation, including pull out			9.85	11.00	10.43	1.726
021 614-1000	Sheet piling steel, including wales, 185 kg/m2, 12 m deep excavation, including pull out			9.04	11.00	10.02	1.881
021 614-1200	Sheet piling steel, including wales, 107 kg/m2, 4.5 m deep excavation, including pull out	SQM		62.14	71.00	66.57	0.274
021 614-1500	Sheet piling steel, including wales, 130 kg/m2, 6 m deep excavation, left in place			72.28	83.00	77.64	0.235
021 614-1600	Sheet piling steel, including wales, 130 kg/m2, 6 m deep excavation, including pull out			56.57	65.00	60.79	0.301
021 614-1800	Sheet piling steel, including wales, 156 kg/m2, 7.6 m deep excavation, left in place	MET.TON		80.57	93.00	86.79	0.211
021 614-1900	Sheet piling steel, including wales, 156 kg/m2, 7.6 m deep excavation, pull & salvage	SQM		63.48	73.00	68.24	0.268
021 614-2000	Sheet piling steel, including wales, 185 kg/m2, 12 m deep excavation, including pull out			56.57	65.00	60.79	0.301
021 614-3910	Wood solid sheeting, including wales, braces and spacers, pull & salvage, 2.4 m deep, 0.6 m wide excavation		0.125 Foreman 1.000 Laborer 1.000 Pile Driver 0.500 Truck Driver 1.000 Air Compressor 354 L/s W/ attachments 0.500 Truck 5 Ton, Handling	13.93	16.00	14.97	0.861
021 614-4000	Wood solid sheeting, including wales, braces and spacers, pull & salvage, 3 m deep, 1.2 m wide excavation			13.27	15.00	14.14	0.904
021 614-4200	Wood solid sheeting, including wales, braces and spacers, pull & salvage, 4.3 m deep, 1.8 m wide excavation			11.55	13.00	12.28	1.039
021 614-4300	Wood solid sheeting, including wales, braces and spacers, pull & salvage, 5.3 m deep, 1.80 m wide excavation			10.04	12.00	11.02	1.195
021 614-4500	Wood solid sheeting, including wales, braces and spacers, pull & salvage, 6.0 m deep, 2.40 m wide excavation			8.03	9.00	8.52	1.494



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CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D.O. MIN.	D.O. MAX.	D.O. AVRG	AVRG. E.H.
021 614-4570	Wood solid sheeting, including wales, braces and spacers, left in place, 4.90 m deep, 1.80 m wide excavation			18.71	22.00	20.36	0.641
021 614-4580	Wood solid sheeting, including wales, braces and spacers, left in place, 6.00 m deep, 2.40 m wide excavation			14.31	16.00	15.16	0.839
021 614-6000	Wood solid sheeting for basement excavation, including wales, braces and spacers, pull & savage, 4.90 m deep, excavation			4.37	5.00	4.69	2.746
021 614-6200	Wood solid sheeting for basement excavation, including wales, braces and spacers, pull & savage, 6.00 m deep, excavation			3.89	4.00	3.95	3.085
<b>021 680</b>	<b>SLURRY WALL</b>						
<b>021 684</b>	<b>SLURRY TRENCH:</b>						
021 684-0050	Slurry trench excavated slurry trench in wet soils backfilled with 21 MPa concrete, no reinforcing steel, average	CUM	0.125 Labor Foreman 4.000 Laborers 1.000 Cement Finisher 1.000 Equip. Operator 2.000 Gas Engine Vibrators 1.000 Hyd. Crane, 23 metric ton	5.00	6.00	5.50	4.800
<b>022</b>	<b>EARTHWORK:</b>						
<b>022 100</b>	<b>GRADING</b>						
022 104-0010	Site excavation & fill, see div 022-200						
022 104-0020	Fine grading see div. 025-122						
<b>022 200</b>	<b>EXCAVATING, BACKFILLING &amp; COMPACTING</b>						
<b>022 204</b>	<b>BACKFILL:</b>						
022 204-0010	Backfill by hand light soil	CUM	1.00 Common Laborer 1.00 Tool Set	10.00	12.00	11.00	0.800
022 204-0100	Backfill by hand heavy soil	CUM	1.00 Common Laborer 1.00 Tool Set	7.00	8.00	7.50	1.143
022 204-0300	Backfill light soil by hand & compaction in 150 mm layers, hand tamp, soft soil			5.83	7.00	6.42	1.372
022 204-0400	Backfill light soil by hand & compaction by roller		1.00 Common Laborer 1.00 Equip. operator 1.00 Tool Set 1.00 Roller Compact, 1000 kg	15.56	18.00	16.78	1.028
022 204-0600	Backfill light soil by hand & compaction by vibrating plate		1.000 Common laborer 1.000 Equip. operator 1.000 Tools set 1.000 Gas engine vibrating plate	13.33	15.00	14.17	1.200
<b>022 208</b>	<b>BACKFILL STRUCTURAL:</b>						
022 208-2000	Backfill from existing stockpile, no compaction, by 75 Hp dozer; 15 Lm haul, sand & gravel	CUM	1.00 Equip. Operator 0.05 Building Laborer 1.00 Dozer, 75 HP	373.00	429.00	401.00	0.021
022 208-2020	Backfill from existing stockpile, no compaction, by 75 Hp dozer; 15 Lm haul, common earth			315.00	362.00	338.50	0.025
022 208-2040	Backfill from existing stockpile, no compaction, by 75 Hp dozer; 15 Lm haul, clay earth			280.00	322.00	301.00	0.029
022 208-3340	Backfill from existing stockpile, no compaction, by 75 Hp dozer; 100 Lm haul, clay earth			106.00	122.00	114.00	0.075
022 208-4000	Backfill from existing stockpile, no compaction, by 225 Hp dozer; 15 Lm haul, sand & gravel		1.00 Equip. Operator 0.05 Building Laborer 1.00 Dozer, 225 HP	987.00	1,135.00	1,061.00	0.006
022 208-4020	Backfill from existing stockpile, no compaction, by 225 Hp dozer; 15 Lm haul, common earth			854.00	982.00	918.00	0.009
022 208-4040	Backfill from existing stockpile, no compaction, by 225 Hp dozer; 15 Lm haul, clay earth			752.00	865.00	808.50	0.011
022 208-4400	Backfill from existing stockpile, no compaction, by 225 Hp dozer; 100 Lm haul, sand & gravel			316.00	363.00	339.50	0.025
022 208-6000	For Compaction See Div. 022226						
022 208-6010	For Trench Backfill See Div. 022254 & 258						
<b>022 212</b>	<b>BORROW:</b>						
022 212-4070	Borrow common earth, shovel, 2 CUM bucket, no haul, bank measure	CUM	0.250 Equipment Operator 2.000 Truck Drivers 0.500 Common Laborers 2.000 Dump Truck 0.250 Power shovel, 2 m <sup>3</sup> bucket	500.00	575.00	537.50	0.036
022 212-7020	Borrow topsoil or loam from stockpile, shovel, 2 CUM bucket, no haul, bank measure			1,100.00	1,265.00	1,182.50	0.016
<b>022 226</b>	<b>COMPACTION:</b>						
022 226-5000	Compaction by riding, vibrating roller, 150 mm lifts, 2 passes, more than 300 cum	CUM	1.000 Equip. operator 1.000 Truck Driver 0.500 Building Laborer 1.000 Vibratory drum roller, 100 HP 1.000 Water Tanker, 25 M3	1,500.00	1,725.00	1,612.50	0.011
022 226-5020	Compaction by riding, vibrating roller, 150 mm lifts, 3 passes			1,000.00	1,150.00	1,075.00	0.016
022 226-5040	Compaction by riding, vibrating roller, 150 mm lifts, 4 passes			750.00	863.00	806.50	0.021
022 226-5060	Compaction by riding, vibrating roller, 300 mm lifts, 2 Passes			3,000.00	3,450.00	3,225.00	0.005

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CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D.O. MIN.	D.O. MAX.	D.O. AVRG.	AVRG. E.H.
022 226-5080	Compaction by riding, vibrating roller, 300 mm lifts, 3 passes			2,000.00	2,300.00	2,150.00	0.008
022 226-5100	Compaction by riding, vibrating Roller, 300 mm Lifts, 4 Passes			1,500.00	1,725.00	1,612.50	0.011
022 226-6200	Compaction by towed vibrating roller, 150 mm I Lifts, 2 passes		1.00 Equip. Operator 1.00 Truck Driver 0.50 Building laborer 1.00 Sheepfoot Roller, 300 HP 1.00 Water Tanker, 25M3	750.00	863.00	806.50	0.021
022 226-6220	Compaction by towed vibrating roller, 150 mm I Lifts, 4 passes			375.00	431.00	403.00	0.043
022 226-6260	Compaction by towed vibrating roller, 300 mm I Lifts, 2 passes			3,000.00	3,450.00	3,225.00	0.005
022 226-7500	Compacting vibrating roller, 600 mm wide, 150 mm lifts, 2 passes			1,600.00	1,840.00	1,720.00	0.010
022 226-7540	Compacting, vibrating roller, 600 mm wide, 150 mm lifts, 4 passes			800.00	920.00	860.00	0.020
022 226-7640	Compacting, vibrating roller, 600 mm wide, 300 mm lifts, 4 passes			1,600.00	1,840.00	1,720.00	0.010
022 226-8600	Compaction by rammer tamper, 300 to 450 mm, 200 mm lifts, 2 passes		1.00 Building Labor 1.00 Gas Engine, Power Tool	100.00	115.00	107.50	0.080
<b>022 230</b>	<b>DRILLING:</b>						
022 230-0010	Drilling Hole Only 50 mm for Rock Bolts, hard rock, Average	LM	0.125 Blast foreman 1.000 Equip. Operator Light 1.000 Common Laborer 1.000 Crawler Type Drill 102mm 1.000 Air Compressor 283.2 L/s with 15m Hoses, 76 mm dia	35.00	40.00	37.50	0.467
022 230-0100	Drilling only in open rock face by jackhammer, easy rock			85.00	96.00	91.50	0.188
022 230-0110	Drilling only in open rock face by jackhammer, moderate rock			70.00	81.00	75.50	0.229
022 230-0120	Drilling only in open rock face by jackhammer, dense rock			30.00	35.00	32.50	0.533
<b>022 234</b>	<b>DRILLING &amp; BLASTING:</b>						
022 234-0100	Drilling & blasting only, in open rock face, moderate rock, over 1000 CUM	CUM	0.125 Blast foreman 1.000 Equip. Operator Light 1.000 Truck Driver 2.000 Common Laborer 1.000 Crawler Type Drill, 102mm 1.000 Air Compressor 283.2 L/s with 15m Hoses, 76 mm dia 1.000 Bed Truck	89.42	103.00	96.21	0.268
022 234-0120	Content, capacity, reduction could be between 15 % to 60 % less than sand soil			94.02	108.00	101.01	0.255
022 234-0140	Drilling & Blasting only, in open rock face, dense rock, over 1000 cum			65.27	75.00	70.14	0.368
022 234-1300	Drilling & blasting only, in open rock face, moderate rock, over 1000 CUM, deep hole method			26.83	31.00	28.92	0.895
022 234-1900	Drilling & blasting only, in open rock face, moderate rock, over 1000 CUM, restricted areas			6.72	8.00	7.36	3.571
<b>022 238</b>	<b>EXCAVATING, BULK BANK MEASURE:</b>						
022 238-0200	Excavation only, bulk bank measure, by crawler excavator, hydraulic, self-propelled, 0.76 cum capacity in common earth	CUM	1.00 Equip. Operator 1.00 Hydraulic Excavator 0.76 cum	308.00	354.00	331.00	0.026
022 238-0210	Excavation only, bulk bank measure, by crawler excavator, hydraulic, self-propelled, 0.76 cum capacity in soft earth			362.00	416.00	389.00	0.022
022 238-0220	Excavation only, bulk bank measure, by crawler excavator, hydraulic, self-propelled, 2.29 cum capacity in common earth			262.00	301.00	281.50	0.031
022 238-0300	Excavation only, bulk bank measure, by backhoe, hydraulic, crawler Mtd. 2.29 CUM capacity in common earth		1 Equip. Operator 1 Hydraulic Excavator 2.29 CUM	926.00	1,065.00	995.50	0.009
022 238-0360	Excavation only, bulk bank measure by Wheel Mtd. excavator 0.57 m3 capacity in common earth		2 Equip. Operator 1 Hydraulic Excavator 0.57 CUM	186.00	214.00	200.00	0.043
022 238-0380	Excavation only, bulk bank measure by Wheel Mtd. excavator 0.57 m3 capacity in heavy soil and stiff clay			158.00	182.00	170.00	0.051
022 238-0500	Excavation only, bulk bank measure, by crawler clamshell excavator, hydraulic, 0.76 cum capacity in common earth		1.00 Equip. Operator 1.00 Clamshell Excavator 0.57 cum	212.00	244.00	228.00	0.038
022 238-0520	Excavation only, bulk bank measure, by crawler clamshell excavator, hydraulic, 0.76 cum capacity in sand and gravel earth			239.00	275.00	257.00	0.033
022 238-0540	Excavation only, bulk bank measure, by crawler clamshell excavator, hydraulic, 0.76 cum capacity in soft earth			250.00	288.00	269.00	0.032
022 238-0700	Excavation only, bulk bank measure, by crawler clamshell excavator, hydraulic, 1.15 cum capacity in common earth		1.00 Equip. Operator 1.00 clamshell Excavator 1.15 cum	320.00	368.00	344.00	0.025
022 238-3750	Excavation only, bulk bank measure, by Power Shovel, 0.57 M3 capacity in M3		1.00 Equip. Operator 1.00 Shovel 0.57 cum w/attachment 0.57 cum	290.00	334.00	312.00	0.028
022 238-3760	Excavation only, bulk bank measure, by Power Shovel, 0.57 M3 capacity in soft soil			341.00	392.00	366.50	0.023
022 238-3770	Excavation only, bulk bank measure, by Power Shovel, 0.57 M3 capacity in heavy soil or stiff clay			247.00	284.00	265.50	0.032
022 238-3900	Excavation only, bulk bank measure, by Power Shovel, 1.15 M3 capacity in common earth		1.00 Equip. Operator 1.00 Shovel 1.15 cum w/attachment 1.15 cum	582.00	670.00	626.00	0.014
022 238-3920	Excavation only, bulk bank measure, by Power Shovel, 1.15 M3 capacity in wet clay soil & sticky			320.00	366.00	344.00	0.025



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CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D.O. MIN.	D.O. MAX.	D.O. AVRG.	AVRG. E.H.
022 238-3940	Excavation only, bulk bank measure, by Power Shovel, 1.15 M3 capacity in poorly blasted rock soil			291.00	335.00	313.00	0.027
022 238-3960	Excavation only, bulk bank measure, by Power Shovel, 1.15 M3 capacity in well blasted rock soil			437.00	503.00	470.00	0.018
022 238-4200	Excavation only, bulk bank measure, by Power Shovel, 1.90 M3 capacity in common earth		1.00 Equip. Operator 1.00 Shovel 1.90 cum w/attachment 1.90 cum	962.00	1,106.00	1,034.00	0.008
022 238-4220	Excavation only, bulk bank measure, by Power Shovel, 1.90 M3 capacity in heavy soil or stiff clay			818.00	941.00	879.50	0.010
022 238-4240	Excavation only, bulk bank measure, by Power Shovel, 1.90 M3 capacity in well blasted rock soil			722.00	830.00	776.00	0.011
022 238-4300	Excavation only, bulk bank measure, by Power Shovel, 2.29 M3 capacity in common earth		1.00 Equip. Operator 1.00 Shovel 2.29 cum w/attachment 2.29 cum	1,158.00	1,332.00	1,245.00	0.007
022 238-4500	Excavation only, bulk bank measure, by Power Shovel, 3.25 M3 capacity in common earth		1.00 Equip. Operator 1.00 Shovel 3.25 cum w/attachment 3.25 cum	1,644.00	1,891.00	1,767.50	0.005
022 238-4520	Excavation only, bulk bank measure, by Power Shovel, 3.25 M3 capacity in common earth with rocks			1,069.00	1,229.00	1,149.00	0.007
022 238-4600	Excavation only, bulk bank measure, by Power Shovel, 4.00 M3 capacity in common earth		1.00 Equip. Operator 1.00 Shovel 4.00 cum w/attachment 4.00 cum	2,022.00	2,325.00	2,173.50	0.004
022 238-4620	Excavation only, bulk bank measure, by Power Shovel, 4.00 M3 capacity in wet sticky clay earth			1,112.00	1,279.00	1,195.50	0.007
022 238-4840	Excavation only, bulk bank measure, by Power Shovel, 4.00 M3 capacity in poorly blasted rock earth			1,011.00	1,163.00	1,087.00	0.008
022 238-800	Loading Excavated Material On Trucks & Hauling Material To 32 Km Round Trip		0.250 Equip. Operator 2.000 Truck Drivers 0.500 Common laborer 2.000 Dump Truck 15 ton 0.250 Power Shovel, 2 m3 Bucket	128.00	147.00	137.50	0.141
022 238-8100	Loading Excavated Material On Trucks & Hauling Material To 64 Km Round Trip			66.87	77.00	71.94	0.269
022 238-8000	Loading Excavated Material On Trucks & Hauling Material To 80 Km Round Trip			53.98	62.00	57.99	0.333
<b>022 242</b>	<b>EXCAVATING BULK DOZER, OPEN SITE:</b>						
022 242-2000	Excavating only & haul in pile by dozer 75 HP, 15 meters haul, sand & gravel	CUM	1.00 Equip. Operator 0.50 Laborer 1.00 Dozer 75 HP	350.00	403.00	376.50	0.023
022 242-2020	Excavating only & haul in pile by dozer 75 HP, 15 meters haul, common earth			306.00	352.00	329.00	0.026
022 242-2040	Excavating only & haul in pile by dozer 75 HP, 15 meters haul, clay earth	CUM	1.00 Equip. Operator 0.50 Laborer 1.00 Dozer 75 HP	214.00	246.00	230.00	0.037
022 242-2440	Excavating only & haul in pile by dozer 75 HP, 90 meters haul, clay earth			41.00	47.00	44.00	0.195
022 242-4000	Excavating only & haul in pile by dozer 200 HP, 15 meters haul, sand and gravel		1.00 Equip. Operator 0.50 Laborer 1.00 Dozer 225 HP	823.00	947.00	885.00	0.010
022 242-4020	Excavating only & haul in pile by dozer 200 HP, 15 meters haul, common earth			720.00	828.00	774.00	0.011
022 242-4040	Excavating only & haul in pile by dozer 200 HP, 15 meters haul, clay earth			658.00	757.00	707.50	0.012
022 242-4220	Excavating only & haul in pile by dozer 200 HP, 45 meters haul, common earth			219.00	252.00	235.50	0.037
022 242-6000	Excavating only & haul in pile by dozer 700 HP, 15 meters haul, sand & gravel		1.00 Equip. Operator 0.50 Laborer 1.00 Dozer 700 HP	4,704.00	5,405.00	5,054.50	0.002
022 242-6010	Excavating only & haul in pile by dozer 700 HP, 15 meters haul, common earth			4,116.00	4,733.00	4,424.50	0.002
022 242-6020	Excavating only & haul in pile by dozer 700 HP, 15 meters haul, clay earth			1,254.00	1,442.00	1,348.00	0.006
022 242-6030	Excavating only & haul in pile by dozer 700 HP, 45 meters haul, sand & gravel			784.00	902.00	843.00	0.010
<b>022 250</b>	<b>EXCAVATING STRUCTURAL:</b>						
022 250-0010	Excavating hand pits, to 2 Meter Deep, Sandy Soil	CUM	1 Common Laborer 1 Tool set	4.50	5.00	4.75	1.778
022 250-0100	Excavating hand pits, to 2 meter deep, heavy or clay soil			3.50	4.00	3.75	2.286
022 250-0150	Excavating hand pits, to 2 meter deep, sandy soil, wet			2.25	3.00	2.63	3.556
022 250-0200	Excavating Piers, to 1.8 meter deep, heavy or clay soil.			3.00	3.00	3.00	2.667
022 250-1550	Excavating hand pits in rocky area using air compressor		0.125 Labor Foreman 2.000 Laborers 1.000 Air Compressor 118 Lbs with Hoses & Accessories	10.00	12.00	11.00	0.800
022 250-1580	Loading hauling trucks by labor from stockpile		1 Common Laborer 1 Tool set	8.00	9.00	8.50	1.000
022 250-2050	Machine excavation for spread, raft footings, elevator pits and small building foundation, common earth, hydraulic backhoe 1.15 M3		1 Equip. Operator 1 Hydraulic Excavator 1.15 CUM	163.00	187.00	175.00	0.049
022 250-2090	Machine excavation for spread, raft footings, elevator pits and small building foundation, sand & gravel, hydraulic backhoe 1.15 M3			183.00	210.00	196.50	0.044
022 250-3030	Machine excavation for spread, raft footings, elevator pits and small building foundation, clay or blasted rock, hydraulic backhoe 1.15 M3			123.00	141.00	132.00	0.065
022 250-0800	Trimming foundation & pit bottoms and sides.	SQM	1 Common Laborer 1 Tool set	20.00	23.00	21.50	0.400
022 250-9026	For Hauling See 022266						



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<b>022 254</b>	<b>EXCAVATING TRENCH OR CONTINUOUS FOOTING: No Sheet piling Or Dewatering Included:</b>						
022 254-0062	Excavating trench up to 1.2 meter deep, 0.57 M3 hydraulic backhoe, common earth	CUM	1 Equip. Operator 1 Hydraulic Excavator 0.57 CUM	232.00	267.00	249.50	0.034
022 254-0110	Excavating trench 1.20 to 2.00 meter deep, 0.57 M3 hydraulic backhoe, common earth			186.00	214.00	200.00	0.043
022 254-0500	Excavating trench 2 to 3.00 meter deep, 0.57 M3 hydraulic backhoe, common earth			140.00	161.00	150.50	0.057
022 254-0610	Excavating trench 2 to 3.00 meter deep, 1.15 M3 hydraulic backhoe, common earth		1 Equip. Operator 1 Hydraulic Excavator 1.15 CUM	350.00	403.00	376.50	0.023
022 254-1000	Excavating trench 3 to 4.00 meter deep, 1.15 M3 hydraulic backhoe, common earth		1 Equip. Operator 1 Hydraulic Excavator 1.15 CUM	306.00	352.00	329.00	0.026
022 254-1030	Excavating trench 3 to 4.00 meter deep, 2.29 M3 hydraulic backhoe, common earth		1 Equip. Operator 1 Hydraulic Excavator 2.29 CUM	648.00	745.00	696.50	0.012
022 254-1310	Excavating trench 4 to 6.00 meter deep, 1.15 M3 hydraulic backhoe, common earth		1 Equip. Operator 1 Hydraulic Excavator 1.15 CUM	268.00	308.00	288.00	0.030
022 254-1330	Excavating trench 4 to 6.00 meter deep, 2.29 M3 hydraulic backhoe, common earth		1 Equip. Operator 1 Hydraulic Excavator 2.29 CUM	567.00	652.00	609.50	0.014
022 254-1400	Excavating trench by hand with pick & shovel, 2 meter deep, light soil.		1 Common Laborer 1 Tool set	4.50	5.00	4.75	1.778
022 254-1700	For tamping backfilled trenches, air tamp add		1 Building Laborer 1 Gas Engine, Power Tool	35.00	40.00	37.50	0.229
022 254-1900	For tamping backfilled trenches, by vibrating plate add			30.00	35.00	32.50	0.267
022 254-2100	For trim sides & bottom of trench, common earth			20.00	23.00	21.50	0.400
022 254-3000	Backfill trench, F.E. loader, wheel Mtd. 0.76 M3 bucket, average haul area 30 meters		1 Equip. Operator 1 F.E. Loader, W.M 0.76 CUM	251.00	289.00	270.00	0.032
022 254-4000	For Backfill With Dozer See Div. 022208						
022 254-4010	For Compaction Of Backfill See Div. 022226						
<b>022 258</b>	<b>EXCAVATING UTILITY TRENCH:</b>						
022 258-0350	Excavating utility trench, common earth with chain trencher, 12 HP, 150 mm wide, 450 mm deep	LM	1 Equip. Operator 1 Trencher, Chain, 12 HP (5 KW)	140.00	161.00	150.50	0.057
022 258-0700	Excavating utility trench, common earth with chain trencher, 12 HP, 200 mm wide, 600 mm deep			125.00	144.00	134.50	0.064
022 258-0750	Excavating utility trench, common earth with chain trencher, 12 HP, 200 mm wide, 900 mm deep			75.00	86.00	80.50	0.107
022 258-1350	Backfill utility trench 150 mm wide, 450 mm deep, by hand including compaction		1 Building Laborer 1 Gas Engine, Power Tool	148.00	170.00	159.00	0.054
022 258-1700	Backfill utility trench 200 mm wide, 600 mm deep, by hand including compaction			83.00	95.00	89.00	0.096
022 258-1750	Backfill utility trench 200 mm wide, 900 mm deep, by hand including compaction	LM	1 Building Laborer 1 Gas Engine, Power Tool	56.00	64.00	60.00	0.143
022 258-2150	Excavating utility trench, common earth with chain trencher, operator riding, 40 HP, 150 mm wide, 600 mm deep		1 Equip. Operator 1 Trencher, Chain, 40 HP (30 KW)	245.00	282.00	263.50	0.033
022 258-2600	Excavating utility trench, common earth with chain trencher, operator riding, 40 HP, 200 mm wide, 1200 mm deep		1 Equip. Operator 1 Trencher, Chain, 40 HP (30 KW)	185.00	213.00	199.00	0.043
022 258-4000	Excavating utility trench, common earth with ditching M/C, 135 HP, crawler, 400 mm wide, 2400 mm deep		1 Equip. Operator 1 Ditching Trencher, 135 HP	185.00	213.00	199.00	0.043
<b>022 262</b>	<b>FILL:</b>						
022 262-0010	Spread fill dumped material, by dozer, no compaction	CUM	1 Equip. Operator 0.5 Laborer 1 Dozer 200 HP	700.00	805.00	752.50	0.011
022 262-0100	Spread fill dumped material, by hand, no compaction		1 Common Laborer 1 Tool set	6.50	7.00	6.75	1.231
022 262-0190	Spread fill dumped material from a stockpile with dozer, 300 HP, 90 m haul		1 Equip. Operator 0.5 Laborer 1 Dozer, 300HP (224KW)	666.00	766.00	716.00	0.012
022 262-0500	Gravel fill compacted under floor slabs, 100 mm deep		1 Labor Foreman 4 Laborers 1 Equip. Operator 1 Tandem Roller 4.5 Ton	750.00	862.00	806.00	0.011
022 262-1300	Alternate pricing method, for gravel fill per M3, gravel fill compacted under floor slabs, 300 mm deep			75.00	86.00	80.50	0.107
022 262-1500	For Fill Under Exterior Paving See Div. 022308						
<b>022 266</b>	<b>HAULING: Avg Speed 40 Km/Hr, Highway Hauler. Bank Measure Including Loading</b>						
022 266-0100	Hauling excavated or borrow material, 4.58 M3 dump truck, swell factor 20%, round trip 10 Km	CUM	1.000 Truck Driver 0.125 Equipment Operator 0.500 Truck Driver 1.000 Dump Truck 5 CUM CAP 0.125 Shovel, Bucket 2.92 CUM	37.00	43.00	40.00	0.243
022 266-0230	Hauling excavated or borrow material, 4.58 M3 dump truck, swell factor 20%, round trip 24 Km			19.50	22.00	20.75	0.480
022 266-0250	Hauling excavated or borrow material, 4.58 M3 dump truck, swell factor 40%, round trip 50 Km			15.50	18.00	16.75	0.581
022 266-0545	Hauling excavated or borrow material, 9.17 M3 dump truck, swell factor 20%, round trip 10 Km			83.00	95.00	89.00	0.108
022 266-0570	Hauling excavated or borrow material, 9.17 M3 dump truck, swell factor 20%, round trip 50 Km			42.00	48.00	45.00	0.214



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CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D.O. MIN.	D.O. MAX.	D.O. AVRG	AVRG. E.H.
022 266-1245	Hauling excavated or borrow material, 15.28 M3 dump truck, swell factor 20%, round trip 10 Km		1.000 Truck Driver 0.250 Equipment Operator 0.500 Truck Driver 1.000 Dump Truck 5 CUM CAP. 0.250 Shovel, Bucket 2.92 CUM	298.00	343.00	320.50	0.034
022 266-1250	Hauling excavated or borrow material, 15.28 M3 dump truck, swell factor 40%, round trip 24 Km			145.00	167.00	156.00	0.069
022 266-1255	Hauling excavated or borrow material, 15.28 M3 dump truck, swell factor 20%, round trip 32 Km			112.00	129.00	120.50	0.089
022 266-1270	Hauling excavated or borrow material, 15.28 M3 dump truck, swell factor 20%, round trip 50 Km			74.00	85.00	79.50	0.135
022 266-1280	Hauling excavated or borrow material, 15.28 M3 dump truck, swell factor 40%, round trip 50 Km			75.00	86.00	80.50	0.133
022 266-1290	Hauling excavated or borrow material, 15.28 m3 dump truck, swell factor 20%, round trip 80 km.			48.00	55.00	51.50	0.208
022 266-1300	Hauling excavated or borrow material, 15.28 M3 dump truck, swell factor 20%, round trip 50 Km, medium traffic, 25 km/hr			48.00	55.00	51.50	0.208
022 266-3000	Hauling excavated or borrow material, 15.28 M3 dump truck, swell factor 40%, round trip 50 Km, heavy traffic 15 km/hr.			30.00	35.00	32.50	0.333
<b>022 286</b>	<b>LOAM OR TOPSOIL:</b>						
022 286-0100	Remove and stockpile loam or topsoil, on site, 200 HP dozer, 150 mm deep, 90 meters haul	CUM	1 Equip. Operator 0.5 Laborer 1 Dozer 200 Hp	205.00	236.00	220.50	0.039
022 286-0400	Spread loam or topsoil from stockpile to rough finished grade, with 1.15 CUM F.E. loader		1 Equip. Operator 1 F.E. Loader, W.M. 1.15 CUM	146.00	168.00	157.00	0.055
022 286-0500	Spread loam or topsoil from stockpile to rough finished grade, up to 60 M radius, by hand		1 Common Laborer 1 Tool belt	7.50	9.00	8.25	1.067
<b>022 300</b>	<b>PAVEMENT BASE:</b>						
<b>022 304</b>	<b>BASE:</b>						
022 304-0100	Prepare and roll Sub-base, small areas upto 2000 SQM	SQM	0.250 Labor Foreman 0.125 Surveyor 1.000 Laborer 3.000 Equipment Operator 1.000 Grader 1.000 Tandem Roller, 9 ton 1.000 Dozer 200 HP 1.000 Water Tanker	943.00	1,084.00	1,013.50	0.034
022 304-0100	Prepare And Roll Sub-base, large areas above 2000 SQM			1,886.00	2,169.00	2,027.50	0.017
<b>022 308</b>	<b>BASE COURSE: FOR ROADWAYS AND LARGE PAVED AREAS</b>						
022 308-0100	Base course, 20 mm Stone, compacted, for paved & large areas, 150 mm deep	SQM	0.250 Labor Foreman 0.125 Surveyor 2.000 Laborer 3.000 Equipment Operator 1.000 Aggregate Spreader 1.000 Tandem Roller, 9 ton 1.000 Dozer 225 HP 1.000 Water Tanker	2,084.11	2,397.00	2,240.56	0.015
022 308-0300	Alternate pricing for base course, 20 mm stone, compacted, per CUM	CUM	0.250 Labor Foreman 0.125 Surveyor 2.000 Laborer 3.000 Equipment Operator 1.000 Aggregate Spreader 1.000 Tandem Roller, 9 ton 1.000 Dozer 225 HP 1.000 Water Tanker	1,498.98	1,724.00	1,611.49	0.021
022 308-0303	Base course, crushed 40 mm stone, compacted, for paved & large area, 200 mm deep			1,237.55	1,423.00	1,330.28	0.026
022 308-0320	Alternate pricing for base course, crushed 40 mm stone, compacted, per CUM			1,286.00	1,479.00	1,382.50	0.025
022 308-0350	Base course, bank run gravel, spread and compacted, 200 mm deep	SQM	0.250 Labor Foreman 0.125 Surveyor 1.000 Laborer 3.000 Equipment Operator 1.000 Grader 1.000 Tandem Roller, 9 ton 1.000 Dozer 200 HP 1.000 Water Tanker	2,458.26	2,827.00	2,642.63	0.013
022 308-0500	Base course bituminous concrete, 100 mm thick		0.375 Labor Foreman 1.000 Surveyor 7.000 Laborers 3.000 Equip. operator 1.000 Asphalt paver 1.000 Tandem Roller, 9 ton 1.000 Roller, Pneumatic Wheel	2,577.00	2,964.00	2,770.50	0.009
022 308-0560	Base course bituminous concrete, 250 mm thick			1,546.00	1,778.00	1,662.00	0.016
022 308-0600	For cold laid asphalt pavement, See Div. 022116						
022 308-0700	Liquid application to gravel base, asphalt emulsion	GAL	0.125 Labor Foreman 2.000 Common Laborer 1.000 Truck Driver 1.000 Asphalt Tanker	5,000.00	5,750.00	5,375.00	0.002
022 308-0800	Liquid application prime & seal cut back asphalt			5,000.00	5,750.00	5,375.00	0.002
022 308-1000	Macadam Penetration Crushed Stone, 9 liter/ M2, 100 mm Thick	SQM		2,111.00	2,428.00	2,269.50	0.004

## Division 02 : SITE WORK

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D.O. MIN.	D.O. MAX.	D.O. AVRG	AVRG. E.H.
022 308-1200	Macadam penetration crushed stone, 18 liter/ M2, 200 mm thick	SQM		1,056.00	1,214.00	1,135.00	0.006
022 308-1511	Alternate pricing for base course, 20 mm stone, compacted, 150 mm thick, per CUM	CUM	0.250 Labor Foreman 0.125 Surveyor 2.000 Laborer 3.000 Equipment Operator 1.000 Aggregate Spreader 1.000 Tandem Roller, 9 ton 1.000 Dozer 225 HP 1.000 Water Tanker	312.62	360.00	336.31	0.102
022 308-1512	Alternate pricing for base course, 20 mm stone, compacted, 230 mm thick, per CUM			344.76	396.00	370.38	0.093
022 308-1513	Alternate pricing for base course, 20 mm stone, compacted, 300 mm thick, per CUM			371.26	427.00	399.13	0.086
022 308-1522	Alternate pricing for base course, crushed 40 mm stone, compacted, per CUM			257.20	296.00	276.60	0.124
022 308-1660	Alternate base course bank run gravel, spread and compacted		0.250 Labor Foreman 0.125 Surveyor 1.000 Laborer 3.000 Equipment Operator 1.000 Grader 1.000 Tandem Roller, 9 ton 1.000 Dozer 200 HP 1.000 Water Tanker	586.10	674.00	630.05	0.055
022 308-1670	Alternate pricing for base course bituminous concrete, metric ton, average thickness 100 mm	TON	0.375 Labor Foreman 1.000 Surveyor 7.000 Laborers 3.000 Equip. operator 1.000 Asphalt paver 1.000 Tandem Roller, 9 ton 1.000 Roller, Pneumatic Wheel 1.000 Asphalt Tanker	515.00	592.00	553.50	0.062
<b>022 400</b>	<b>SOIL STABILIZATION</b>						
<b>022 408</b>	<b>GROUTING PRESSURE:</b>						
022 408-0200	Grouting cement & sand 1:1 mix, average	CUM	3 Laborers 1 Equip. Oper. (light) 1 Cement mixer, 1.53 m3	5.00	6.00	5.50	1.600
022 408-0800	Soil stabilization, including scarifying compaction, asphalt 75 mm deep, 1.00 gallon per SQM	SQM	0.125 Labor Foreman 2.000 Common Laborers 3.000 Equipment Operators 2.000 Truck Drivers 1.000 Grader 13608 kg with ripper attachment 2.000 Stabilizers, 310 HP 1.000 Truck 10 ton 1.000 Water Tank 20 CUM	2,200.00	2,530.00	2,365.00	0.018
022 408-0900	Soil stabilization, including scarifying compaction, asphalt 75 mm deep, 1.50 gallon per SQM			2,000.00	2,300.00	2,150.00	0.020
022 408-1000	Soil stabilization, including scarifying compaction, asphalt 200 mm deep, 6 gallon per SQM			1,650.00	1,898.00	1,774.00	0.024
022 408-2000	Soil stabilization, including scarifying compaction, cement 4% To 12% mix by volume, 150 mm deep	SQM	1 Labor Foreman 2 Laborer 4 Equip. Operator 3 Truck Driver 1 Grader 13608 Kg with ripper attachment 1 Flat Truck, 3 Ton 1 Cement Spreader, Towed 1 Vibrating Roller 2 Stabilizers, 310 HP 1 Truck 27 Ton 1 Water Tank 20 CUM	800.00	920.00	860.00	0.080
022 408-2100	Soil stabilization, including compaction, cement 4% To 12% mix by volume, 300 mm deep			700.00	805.00	752.50	0.091
022 408-3000	Geotextile fabric, woven, 90 Kg tensile strength		0.125 Labor Foreman 2.000 Common Laborers 2.000 Toolsets	1,600.00	1,840.00	1,720.00	0.010
022 408-3100	Geotextile fabric, woven, heavy duty, 270 Kg tensile strength			1,500.00	1,725.00	1,612.50	0.011
022 408-3200	Geotextile fabric, non-woven, 55 Kg tensile strength			1,600.00	1,840.00	1,720.00	0.010
022 408-3600	Hydrated lime, for base, 2% To 6% mix by weight, 150 mm deep	SQM	1 Labor Foreman 2 Laborer 4 Equip. Operator 3 Truck Driver 1 Grader 13608 Kg 1 Flat Truck, 3 Ton 1 Cement Spreader, Towed 1 Vibrating Roller 2 Stabilizers, 310 HP 1 Truck 27 Ton 1 Water Tank 20 CUM	1,300.00	1,495.00	1,397.50	0.049
022 408-3800	Hydrated lime, for base, 2% to 6% mix by weight 300 mm deep			1,100.00	1,265.00	1,182.50	0.059
<b>022 700</b>	<b>SLOPE PROTECTION &amp; EROSION CONTROL</b>						
<b>022 702</b>	<b>CUT DRAINAGE:</b>						



## Division 02 : SITE WORK

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D.O. MIN.	D.O. MAX.	D.O. AVRG	AVRG. E.H.
022 702-0010	Cut drainage ditch in common earth, 10 meters wide, 300 mm deep, including ditch cleaning	LM	0.125 Labor Foreman 1.000 Equipment Operator 2.000 Laborers 1.000 Grader, 13.6 Ton	1,800.00	2,070.00	1,935.00	0.004
<b>022 704</b>	<b>EROSION CONTROL:</b>						
022 704-0010	Jute mesh, 1200 mm wide, 85 SQM /roll, stapled.	SQM	0.125 Labor Foreman 2.000 Common Laborers 2.000 Tool Sets	1,600.00	1,840.00	1,720.00	0.010
022 704-0200	Polypropylene mesh, stapled, 220 gram/SQM			1,600.00	1,840.00	1,720.00	0.010
022 704-0200	Silt fence, polypropylene, adverse conditions			250.00	266.00	269.00	0.064
<b>022 708</b>	<b>RETAINING WALLS:</b>						
022 708-1900	Concrete gravity wall with vertical face, including excavation & backfill, non-reinforced, 1.8 meter high, level embankment.	SQM	0.500 Skilled Foreman 5.000 Skilled Laborers 3.000 Common Laborers 0.250 Cement Finisher 0.250 Equip. Operator 0.250 Crane 50 Ton 0.250 Gas Engine Vibrator 0.125 Concrete Pump & Transit mixer 0.125 Truck 25 ton 2.000 Power Tools 0.125 Trencher	8.78	10.00	9.39	2.620
022 708-2200	Concrete gravity wall, with vertical face, including excavation & backfill, non-reinforced, 2.40 meter high, level embankment.			6.59	8.00	7.30	3.490
022 708-2300	Concrete gravity wall, with vertical face, including excavation & backfill, non-reinforced, 2.40 meter high, 33 degree sloped embankment.			5.76	7.00	6.38	3.993
022 708-2300	Concrete gravity wall, including excavation & backfill, non-reinforced, 3.00 meter high, 33 degree sloped embankment.			4.61	5.00	4.81	4.989
022 708-3000	Reinforced concrete, cantilever wall, including excavation & backfill, 1.8 meter high, 33 degree sloped embankment.			7.84	9.00	8.42	2.934
022 708-3100	Reinforced concrete, cantilever wall, including excavation & backfill, 3 meter high, 33 degree sloped embankment.			4.70	5.00	4.85	4.894
022 708-3200	Reinforced concrete, cantilever wall, including excavation & backfill, 6.00 meter high, 33 degree sloped embankment.			2.35	3.00	2.68	9.787
022 708-4100	Concrete filled slurry trench, see division 021-684						
<b>022 712</b>	<b>RIP-RAP:</b>						
022 712-0100	Rip-rap, random broken stone, machine placed, for slope protection, 0.29 to 0.19 cum pieces, grouted	CUM	0.125 Labor Foreman 1.000 Skilled Labor 2.000 Equip. Operator 1.000 Common laborer 1.000 Shovel 0.57 cum 1.000 Clamshell Backhoe, 0.57 m3 1.000 Grout Machine	55.00	63.00	59.00	0.436
022 712-0200	Rip-rap, random broken stone, machine placed, for slope protection, 450 mm thick, not grouted	SQM	0.125 Labor Foreman 5 Laborers 1 Equip. Operator 1 Hydraulic Crane	35.00	40.00	37.50	0.229
022 712-0600	Gabions, galvanized steel mesh, stone filled, 300 mm deep			90.00	104.00	97.00	0.089
022 712-0800	Gabions, galvanized steel mesh, stone filled, 900 mm deep			35.00	40.00	37.50	0.229
<b>022 716</b>	<b>STONE WALL:</b>						
022 716-0600	Stone wall, including excavation, concrete footing and stone, 900 mm below grade, exposed area measure cut stone, 2 meters high, 450 mm thick, mortar set	SQM	0.250 Skilled Foreman 1.000 Skilled labor 5.000 Common laborer 1.000 Equip. Operator 0.500 Crane 80 ton 0.250 Backhoe, 057 M3	2.50	3.00	2.75	2.400
<b>022 800</b>	<b>SOIL TREATMENT</b>						
<b>022 804</b>	<b>TERMITE PRETREATMENT:</b>						
022 804-0100	Termite treatment, slabs complete with insecticides for control, average	SQM	0.125 Skilled Foreman 2.000 Skilled Worker 2.000 Power Tools	225.00	259.00	242.00	0.071
022 804-0100	Termite treatment, walls complete with insecticides for control, average			226.00	260.00	243.00	0.071
<b>023</b>	<b>TUNNELING, PILES &amp; CAISSONS</b>						
<b>023 550</b>	<b>PILES DRIVING</b>						
<b>023 554</b>	<b>MOBILIZATION:</b>						
023 554-0100	Mobilization & demobilization of driven pile equipment from warehouse to site within city limit, 3 days mobilization	LM	1.000 Skilled Foreman 3.000 Skilled Workers 1.000 Equip. Operator 2.000 Mechanist 2.000 Truck Driver 5.000 Common Laborers 1.000 Crane 135 ton 2.000 Bed Truck	0.33	0.40	0.37	72.727
<b>023 558</b>	<b>PILING SPECIAL COSTS:</b>						

**Division 02 : SITE WORK**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D.O. MIN.	D.O. MAX.	D.O. AVRG	AVRG. E.H.
023 558-0500	Cutoffs of plain concrete pile, 500 mm diameter	EA	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 1.000 Concrete Saw	4.50	5.00	4.75	1.778
023 558-0600	Cutoffs of plain with thin shell			3.75	4.00	3.88	2.133
023 558-0700	Cutoffs of steel pile			13.00	15.00	14.00	0.615
	Note: Add for pile testing as specified						
<b>023 600</b>	<b>DRIVEN PILES</b>						
<b>023 604</b>	<b>PILES CONCRETE: 200 Piles, 18 Meter Long</b>						
023 604-0100	Cast in place, thin wall shell pipe pile, straight sided, non-reinforced 200 mm diameter, 16 gauge, 8.5 Kg/Lm, not including mobilization & pile caps	LM	1.000 Skilled Foreman 4.000 Pile Drivers 1.000 Mechanic 3.000 Equip. Operators 1.000 Common Laborer 1.000 Crane, 36 ton, with 60 m leads & 1 hammer 1.000 Air compressor with hoses	155.00	178.00	166.50	0.103
023 604-0300	Cast in place, thin wall shell pile, straight sided, non-reinforced 300 mm diameter, 16 gauge, 13 Kg/Lm, not including mobilization & pile caps			124.00	143.00	133.50	0.129
023 604-0400	Cast in place, thin wall shell pile, straight sided, non-reinforced 350 mm diameter, 16 gauge, 14.88 Kg/Lm, not including mobilization & pile caps			116.00	133.00	124.50	0.138
023 604-0500	Cast in place, thin wall shell pile, straight sided, non-reinforced 400 mm diameter, 16 Gauge, 17 Kg/Lm, not including mobilization & pile caps			105.00	121.00	113.00	0.152
023 604-0800	Cast in place, friction pile, fluted, non-reinforced concrete tapered steel, 28MPa, 300 mm diameter, 7 gauge, not including mobilization & pile caps			124.00	143.00	133.50	0.129
023 604-1200	Cast in place, friction pile, fluted, non-reinforced concrete tapered steel, 28 MPa, 450 mm diameter, 7 gauge, not including mobilization & pile caps			93.00	107.00	100.00	0.172
023 604-1400	Cast in place concrete, end bearing, pile, fluted, no reinforcement, Constant Diameter, 28 MPa, 450 mm Diameter, 7 Gauge			93.00	107.00	100.00	0.172
023 604-2500	Precast, prestressed, pile, 400 mm diameter, 75 mm wall, wall thickness, up to 110 mm, pile either with void or cylinder type, shape either square or octagonal			126.00	145.00	135.50	0.127
023 604-2900	Precast, prestressed, pile, 600 mm diameter, 90 mm wall, wall thickness, up to 110 mm, pile either with void or cylinder type, shape either square or octagonal			95.00	109.00	102.00	0.168
023 604-2920	Precast, prestressed, pile, 900 mm diameter, 115 mm wall, wall thickness, up to 125 mm pile cylinder shape type			76.00	87.00	81.50	0.211
023 604-2940	Precast, prestressed, pile, 1.4 m diameter, 130 mm wall, wall thickness, up to 130 mm, pile cylinder shape type			63.00	72.00	67.50	0.254
023 604-2960	Precast, prestressed, pile, 1.6 m diameter, 150 mm wall, wall thickness up to 150 mm, pile cylinder shape type			38.00	44.00	41.00	0.421
<b>023 608</b>	<b>STEEL PILES:</b>						
023 608-0120	Steel tapered, round, concrete filled, 200 mm tip, 54 ton capacity, 18 meters deep	LM	1.000 Skilled Foreman 4.000 Pile Drivers 1.000 Mechanic 3.000 Equip. Operators 1.000 Common Laborer 1.000 Crane, 36 ton, with 60 m leads & 1 hammer 1.000 Air compressor with hoses	162.00	186.00	174.00	0.099
023 608-0200	Steel tapered, round, concrete filled, 300 mm tip, 109 ton capacity, 18 meters deep			130.00	150.00	140.00	0.123
023 608-0250	Pile, steel, "H" section, 15 m long, 200 mm x 200 mm, 54 Kg/Lm			136.00	156.00	146.00	0.118
023 608-0800	Pile, steel, "H" section, 15 m long, 300 mm x 300 mm 110 Kg/Lm			109.00	125.00	117.00	0.147
023 608-1300	Pile, steel, "H" section, 15 m long, 350 mm x 350 mm 150 Kg/Lm			93.00	107.00	100.00	0.172
023 608-3300	Steel pipe pile, concrete filled, 300 mm diameter, average scattered spacing, 65 kg/m, 18 meters deep, including splices	LM	1.000 Skilled Foreman 4.000 Pile Drivers 1.000 Mechanic 3.000 Equip. Operators 1.000 Common Laborer 1.000 Crane, 36 ton, with 60 m leads & 1 hammer 1.000 Air compressor with hoses	81.00	93.00	87.00	0.198
023 608-3900	Steel pipe pile, concrete filled, 400 mm diameter, average scattered spacing, 77 kg/m, 18 meters deep, including splices			68.00	78.00	73.00	0.235
023 608-4200	Steel pipe pile, concrete filled, 450 mm diameter, average scattered spacing, 88 kg/m, 18 meters deep, including splices			60.00	69.00	64.50	0.261
<b>023 700</b>	<b>BORED / AUGERED PILES:</b>						
<b>023 704</b>	<b>PRESSURE INJECTED FOOTINGS:</b>						
023 704-0200	Uncased shaft, up to 70 ton capacity, 430 mm diameter, 8 meters deep, including mobilization & demobilization	LM	1.000 Skilled Foreman 4.000 Pile Drivers 1.000 Mechanic 2.000 Equip. Operators 1.000 Common Laborer 1.000 Crane, 36 ton, with 60 m leads & 1 hammer	35.00	40.00	37.50	0.229



## Division 02 : SITE WORK

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D.O. MIN.	D.O. MAX.	D.O. AVRG	AVRG. E.H.
023 704-0500	Uncased shaft, 70 ton capacity, 560 mm diameter, 6 meters deep, including mobilization and demobilization	↓	↓	30.00	35.00	32.50	0.267
<b>023 800</b>	<b>CAISSONS:</b>						
<b>023 804</b>	<b>CAISSONS:</b>						
023 804-0100	Open style caissons, machine drilled, with concrete, in stable ground, no casings or ground water, 15 meters deep, 450 mm diameter.	LM	1.000 Skilled Foreman 2.000 Pile Drivers 2.000 Common Laborers 1.000 Heavy Equip. Operator 1.000 Truck Driver 1.000 Drill Rig & Auger, Truck Mtd.	45.00	52.00	48.50	0.178
023 804-0200	Open style caissons, machine drilled, with concrete, in stable ground, no casings or ground water, 15 meters deep, 600 mm diameter.			42.00	48.00	45.00	0.190
023 804-0400	Open style caissons, machine drilled, with concrete, in stable ground, no casings or ground water, 15 meters deep, 900 mm diameter.			29.00	33.00	31.00	0.276
023 804-0500	Open style caissons, machine drilled, with concrete, in stable ground, no casings or ground water, 15 meters deep, 1.2 m diameter.			23.00	26.00	24.50	0.348
023 804-0600	Open style caissons, machine drilled, with concrete, in stable ground, no casings or ground water, 15 meters deep, 1.5m diameter.			20.00	23.00	21.50	0.400
023 804-0700	Open style caissons, machine drilled, with concrete, in stable ground, no casings or ground water, 15 meters deep, 1.8 m diameter.			18.00	21.00	19.50	0.444
023 804-1020	Bell including concrete & excavation 1.2 m diameter for caissons shaft 600 mm			14.00	16.00	15.00	0.571
023 804-1080	Bell including concrete & excavation 2.7 m diameter for caissons shaft 1.2 m			1.50	2.00	1.75	5.333
023 804-1100	Bell including concrete & excavation 3.0 m diameter for caissons shaft 1.5 m			1.00	1.00	1.00	8.000
023 804-1180	Bell including concrete & excavation 3.7 m diameter for caissons shaft 1.8 m	↓	↓	1.00	1.00	1.00	8.000
023 804-1300	Open style caissons, machine drilled, with concrete, in wet ground, pulled casing, and pumping, 15 meters deep, 450 mm diameter.	LM	1.000 Skilled Foreman 2.000 Pile Driver 3.000 Common Laborers 1.000 Heavy Equip. Operators 1.000 Mechanic 1.000 Drill rig & auger, truck mtd 1.000 Pump w/ tubing	36.00	41.00	38.50	0.444
023 804-1600	Open style caissons, machine drilled, with concrete, in soft ground, no casing, 18 meters deep, 450 mm diameter.			8.70	10.00	9.35	1.839
023 804-1900	Open style caissons, machine drilled, with concrete, in soft rock ground, pulled casing, and pumping, 18 meters deep, 900 mm diameter.	↓	↓	4.50	5.00	4.75	3.556
<b>024</b>	<b>RAILROAD AND MARINE WORK</b>						
<b>024 520</b>	<b>RAILROAD TRACKWORK</b>						
<b>024 524</b>	<b>RAILROAD:</b>						
024 524-0010	Car bumpers heavy duty	EA	0.125 Skilled Foreman 1.000 Skilled Worker "Railman" 4.000 Common laborers 1.000 Equip. operator 1.000 Backhoe, 50 HP	1.50	2.00	1.75	5.333
024 524-0300	Derrails hand throw, with standard timbers, open stand	EA		4.00	5.00	4.50	2.000
024 524-0800	Sliding yard spur, level grade, on wood ties & ballast, 36 Kg rail.	LM		12.00	14.00	13.00	0.667
024 524-0822	Sliding yard spur, level grade, on wood ties & ballast, 45 Kg rail.			12.00	14.00	13.00	0.667
024 524-0822	Sliding yard spur, level grade, on wood ties & ballast, 50 Kg rail.			12.00	14.00	13.00	0.667
024 524-1002	Siding, steel ties in concrete, with fasteners and plates, rail 36 Kg	↓	↓	4.50	5.00	4.75	1.778
024 524-1012	Siding, steel ties in concrete, with fasteners and plates, rail 41 Kg	LM	0.125 Skilled Foreman 1.000 Skilled Worker "Railman" 4.000 Common laborers 1.000 Equip. operator 1.000 Backhoe, 50 HP	4.50	5.00	4.75	1.778
024 524-1020	Siding, steel ties in concrete, with fasteners and plates, rail 45 Kg			4.50	5.00	4.75	1.778
024 524-1030	Siding, steel ties in concrete, with fasteners and plates, rail 50 Kg	↓	↓	4.50	5.00	4.75	1.778
024 524-1400	Ties concrete, 2600 mm long, 760 mm O.C.	LM	0.125 Skilled Foreman 1.000 Skilled Worker "Railman" 4.000 Common laborers 1.000 Equip. operator 1.000 Backhoe, 50 HP	55.00	63.00	59.00	0.145
024 524-2400	Wheel stops, fixed	EA		9.00	10.00	9.50	0.889
<b>024 820</b>	<b>MARINE WORK:</b>						
<b>024 824</b>	<b>DREDGING:</b>						
024 824-0100	Mobilization & demobilization of Equipment, average of 7 days for mobilization	Day	1.00 Skilled Foreman 3.00 Skilled Workers 1.00 Equip. Operator 2.00 Machinist 2.00 Truck Driver 5.00 Common Laborers 1.00 Crane 135 ton 2.00 Bed Truck	0.14	0.20	0.17	171.429

## Division 02 : SITE WORK

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D.O. MIN.	D.O. MAX.	D.O. AVRG	AVRG. E.H.
024 824-0300	Barge mounted clamshell excavation into scows, dumped 30 Km at sea	CUM	1.00 Labor Foreman 1.00 Machinist 4.00 Common Laborers 1.00 Heavy Equip. Operator 1.00 Barge 1.00 Clamshell Backhoe, 0.76 cum	180.00	207.00	193.50	0.089
024 824-0500	Barge mounted dragline or clamshell hooper dumped, pumped 300 meters to shore dump	CUM	1.00 Labor Foreman 1.00 Machinist 4.00 Common Laborers 2.00 Heavy Equip. Operator 1.00 Light Equip. Operator 1.00 Power shovel 0.76 cum 1.00 Barge 1.00 Clamshell Backhoe, 0.76 cum 1.00 Pump with 1 suction & 20 Discharge hoses	200.00	230.00	215.00	0.160
<b>024 840</b>	<b>SEAWALL &amp; BULKHEADS</b>						
<b>024 844</b>	<b>BULKHEADS:</b>						
024 844-0020	Bulkheads reinforced concrete, include footing and tie-backs, up to 1.8 m high, average	LM	0.500 Skilled Foreman 5.000 Skilled Laborers 3.000 Common Laborers 0.250 Cement Finisher 0.250 Equip. Operator 0.250 Crane 50 Ton 0.250 Gas Engine Vibrator 0.125 Concrete Pump & transit mixer 0.125 Truck 25 ton 2.000 Power Tools 0.125 Trencher	6.91	8.00	7.46	3.329
024 844-0100	Bulkheads reinforced concrete, include footing and tie-backs, up to 3.7 m high, average			3.36	4.00	3.68	6.845
024 844-0600	Bulkheads Crushed stone placed behind bulkhead by clam bucket	CUM	0.125 Labor Foreman 5.00 Laborers 1.00 Equip. Operator 1.00 Hydraulic Crane, 11 ton	28.00	32.00	30.00	0.286
024 844-6000	Crushed stone placed behind bulkhead by clam bucket	CUM	1.00 Equip. Operator 1.00 Clamshell Backhoe 0.76 M3	95.00	109.00	102.00	0.084
<b>024 848</b>	<b>BULKHEADS, RESIDENTIAL CANAL:</b>						
024 848-0060	Bulkheads, aluminum panel sheeting, including concrete cap and anchor, coarse compact sand, 1.8 m high, 800 mm embedment	LM	0.500 Pile Driver Foreman 4.00 Pile Drivers 1.00 Equip. Operator (crane) 1.00 Equip. Operator (oil) 1.00 Crane 35 metric ton 0.625 Vibratory hammer & gen 0.500 Bed truck	53.00	61.00	57.00	0.321
024 848-0140	Bulkheads, aluminum panel sheeting, including concrete cap and anchor, coarse compact sand, 1.8 m high, 1.2 m embedment			37.00	45.00	40.00	0.459
024 848-0240	Bulkheads, Aluminum panel sheeting, including concrete cap and anchor, coarse compact sand, 2.4 m high, 1.5 m embedment			25.00	29.00	27.00	0.680
<b>024 880</b>	<b>DOCKS &amp; FACILITIES</b>						
<b>024 884</b>	<b>DOCKS, FIXED:</b>						
024 884-0030	Fixed dock, pile supported, treated wood, 1.5 m x 6 m platform, average	SQM	0.125 Skilled Foreman 3.00 Skilled workers 1.00 Pile Driver 1.00 Truck Driver 2.00 Common Laborers 1.00 Air Compressor 1.00 Truck 3 Ton 2.00 Power Tools	0.76	1.00	0.88	42.105
024 884-0200	Fixed dock, pile supported, treated wood, 2.4 m x 6 m platform, average			0.60	1.00	0.80	53.333
<b>025</b>	<b>PAVING &amp; SURFACING</b>						
<b>025 100</b>	<b>WALK/ROAD/PARKING PAVING</b>						
<b>025 104</b>	<b>ASPHALTIC CONCRETE PAVEMENT:</b>						
025 104-0160	Asphalt concrete pavement, binder course, 75 mm thick	SQM	0.375 Labor Foreman 1.000 Surveyor 7.000 Laborers 3.000 Equip. operator 1.000 Asphalt Paver 1.000 Tandem Roller, 8 Ton 1.000 Roller, Pneumatic Wheel	5,095.00	5,859.00	5,477.00	0.005
025 104-0120	Asphalt concrete pavement, binder course, 50 mm thick			4,442.00	5,108.00	4,775.00	0.005
025 104-0160	Asphalt concrete pavement, wearing course, 75 mm thick			3,364.00	3,854.00	3,609.00	0.007
025 104-0300	Asphalt concrete pavement, wearing course, 25 mm thick			6,370.00	7,327.00	6,848.00	0.004
025 104-0380	Asphalt concrete pavement, wearing course, 50mm thick			4,220.00	4,853.00	4,536.50	0.006
025 104-0460	Asphalt concrete pavement, wearing course, 75mm thick			3,200.00	3,680.00	3,440.00	0.006



**Division 02 : SITE WORK**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D.O. MIN.	D.O. MAX.	D.O. AVRG	AVRG. E.H.
025 104-0810	Asphalt concrete pavement, wearing course, alternate method by ton for average of 50 mm thick.	↓	↓	422.00	485.00	453.50	0.057
<b>025 116</b>	<b>COLD LAID ASPHALT PAVEMENT:</b>						
025 116-0100	100mm course blade mixed, spread & compacted	CUM	1 Labor Foreman 2 Laborers 4 Equip. Oper. (medium) 2 Graders, 13 608 kg 1 Roller, Steel Wheel 1 Roller, Pneumatic Wheel	1,514.00	1,741.00	1,627.50	0.021
025 116-020 0	100mm course plant mixed, spread & compacted	CUM	1 Labor Foreman 2 Laborers 4 Equip. Oper. (medium) 2 Graders, 13 608 kg 1 Roller, Steel Wheel 1 Roller, Pneumatic Wheel	1,160.00	1,334.00	1,247.00	0.028
<b>025 120</b>	<b>CONCRETE PAVEMENT:</b>						
025 120-0020	Concrete pavement including joints, finishing, and curing, fixed form, 4m wide passage, reinforced, 150 mm thick	SQM	1.00 Skilled Foreman 9.00 Skilled Workers 3.00 Common Laborers 0.125 Equip. operator (med) 0.375 Concrete Pump 2.00 Power Tools 0.375 Gas Engine Vibrator 3.00 Gas Finishing M/C	90.40	104.00	97.20	0.509
025 120-0100	Concrete pavement including joints, finishing, and curing, fixed form, 4m wide passage, reinforced, 200 mm thick			87.45	101.00	94.23	0.526
025 120-0400	Concrete pavement including joints, finishing, and curing, fixed form, 4m wide passage, reinforced, 300 mm thick			76.00	87.00	81.50	0.605
025 120-0550	Concrete pavement including joints, finishing, and curing, fixed form, 2m wide passage, reinforced, 150 mm thick for small irregular areas			72.32	83.00	77.66	0.636
025 120-0700	Concrete pavement, finishing, broom finish small areas		0.250 Labor Foreman 1.000 Cement Finishers 1.000 Gas Finishing M/C	55.00	63.00	59.00	0.145
025 120-0100	Concrete pavement, Curing with sprayed membrane by hand	↓	2 Common Laborers	800.00	920.00	860.00	0.000
<b>025 122</b>	<b>FINE GRADE:</b>						
025 122-1100	Fine grade granular base for slab on grade by machine	SQM	0.250 Labor Foreman 0.125 Surveyor 1.00 Laborer 3.00 Equip. Operator 1.00 Grader 1.00 Tandem Roller, 9 ton 1.00 Dozer 200 HP 1.00 Water Tanker	1,020.00	1,173.00	1,096.50	0.031
025 122-1150	Fine grade granular base 200 mm thick for slab on grade, in confined area, hand grading	SQM	2 Laborers 1 Vibrating Compactor	95.00	109.00	102.00	0.084
<b>025 128</b>	<b>SIDEWALKS, DRIVEWAYS, &amp; PATIOS No base</b>						
025 128-0020	Sidewalk, asphaltic concrete, 50 mm thick	SQM	4 Laborers 1 Equip. Oper. (light) 1 Tandem Roller, 4.5 met ton	468.00	538.00	503.00	0.017
025 128-0310	Sidewalk, concrete, 20 MPa, cast in place with 150 x 150-100 mm/100 mm mesh, broomed finish, no base, 100 mm thick		0.125 Labor Foreman 2.00 Skilled Worker 1.00 Common Laborer 1.00 Gas Finishing M/C	27.00	31.00	29.00	0.296
025 128-1000	Sidewalk, crushed stone, 25 mm thick, white marble, or bluestone		0.125 Labor Foreman 2.00 Common Laborer 2.00 Tools Set	100.00	115.00	107.50	0.160
025 128-1650	Sidewalk, limestone pavers, 75 mm thick		0.125 Labor Foreman 1.000 Brick Layer 1.000 Common Laborer 1.000 Tools Set	5.00	6.00	5.50	1.600
025 128-1700	Sidewalk, redwood, prefabricated, 1200 mm x 1200 mm sections	↓	0.125 Labor Foreman 2.00 Skilled Workers 2.00 Power Tools	20.00	23.00	21.50	0.800
<b>025 150</b>	<b>UNIT PAVERS</b>						
<b>025 158</b>	<b>BRICK PAVING:</b>						
025 158-0300	Brick pavers, laid on 100 mm thick concrete bed, 100 mm x 200 mm x 38 mm, grouted, 10 mm joint	SQM	0.125 Labor Foreman 1.000 Brick Layer 1.000 Common Laborer 1.000 Tools Set	6.00	7.00	6.50	1.333
025 158-1500	Brick pavers, 100 mm x 200 mm x 57 mm laid flat on 100 mm thick sand bed			300.00	345.00	322.50	0.027
025 158-2800	Brick paving, steam cleaning	↓	1 Building Laborer 1 Gas Eng. Power Tool	100.00	115.00	107.50	0.080
<b>025 162</b>	<b>CONCRETE BLOCK PAVERS:</b>						
025 162-0720	Pavers Precast concrete 50 mm thick, 400 mm x 400 mm	SQM	0.125 Labor Foreman 1.000 Brick Layer 1.000 Common Laborer 1.000 Tools Set	24.00	28.00	26.00	0.333
<b>025 166</b>	<b>STONE PAVERS:</b>						
025 166-1100	Stone pavers, irregular, 25 mm thick	SQM	1 Building Laborer 1 Gas Eng. Power Tool	6.00	7.00	6.50	1.333
025 166-1250	Stone pavers, random, rectangular, 50 mm thick			6.00	7.00	6.50	1.333

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CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D.O. MIN.	D.O. MAX.	D.O. AVRG	AVRG. E.H.
025 166-1550	Pavers,granite blocks, 90 mm x 90 mm x 90 mm	↓	↓	7.00	8.00	7.50	1.143
<b>025 250</b>	<b>CURBS</b>						
<b>025 254</b>	<b>CURBS:</b>						
025 254-0300	Curbs, Concrete, 200 mm x 450 mm,wood forms,straight	LM	0.125 Labor Foreman 4.000 Carpenters 1.00 Common Laborer 4.00 Power Tools	100.00	115.00	107.50	0.320
025 254-0400	Curbs, Concrete, 200 mm x 450 mm,wood forms,curved			40.00	46.00	43.00	0.800
025 254-0435	Curb & gutter,straight with 150 mm high curb and 150 mm thick gutter,wood forms 760 mm wide, 0.17 m3/m		↓	60.00	69.00	64.50	0.533
025 254-0550	Curb & gutter precast,150 mm high curb,150 mm thick gutter, 450 mm wide,straight	↓	0.125 Skilled Foreman 4.000 Common Laborers 1.000 Equip. Operator 1.000 Grader, 2.7 metric ton	150.00	173.00	161.50	0.053
<b>025 300</b>	<b>ATHLETIC PAVE/SURFACING</b>						
<b>025 304</b>	<b>RUNNING TRACK:</b>						
025 304-0050	Running track,colored rubberized asphalt pavement, 25 mm thick	SQM	0.375 Labor Foreman 1.000 Surveyor 7.000 Laborers 3.000 Equip. operator 1.000 Asphalt Paver 1.000 Tandem Roller, 9 Ton 1.000 Roller, Pneumatic Wheel	956.00	1,099.00	1,027.50	0.025
025 304-0300	Running track,rubber-vermiculite asphalt,colored, 25 mm thick	"	"	957.00	1,101.00	1,029.00	0.025
<b>025 308</b>	<b>TENNIS COURT:</b>						
025 308-0200	Double tennis court,asphaltic concrete,including base, 64 mm thick, colored sealer,acrylic emulsion, 3 coats	SQM	0.375 Labor Foreman 1.000 Surveyor 7.000 Laborers 3.000 Equip. operator 1.000 Asphalt Paver 1.000 Tandem Roller, 9 Ton 1.000 Roller, Pneumatic Wheel	480.00	552.00	516.00	0.050
025 308-0200	Double tennis court, asphaltic concrete, finish colored sealer, acrylic emulsion 3 coats.	"	1.00 Common Laborer 1.00 Tools Set	240.00	276.00	258.00	0.033
025 308-1400	Tennis court,posts for nets, 90 mm diameter with eye bolts,or pulley & reel	PAIR	0.125 Labor Foreman 2.000 Common Laborers 2.000 Tools Set	3.00	3.00	3.00	5.333
025 308-1700	Tennis court,net,13 m long,nylon thread with binder	PAIR	0.125 Labor Foreman 2.000 Common Laborers 2.000 Tools Set	42.00	48.00	45.00	0.381
025 308-2000	Tennis court,paint markings on asphalt, 2 coats	COURT	1 Painter 1 Tools Set	1.00	1.00	1.00	8.000
<b>025 400</b>	<b>SYNTHETIC SURFACING</b>						
<b>025 404</b>	<b>TURF,ARTIFICIAL:</b>						
025 404-0910	Artificial turf,including 65 mm asphalt base with 150 mm crushed stone,no drainage	SQM	1.00 Skilled Worker Foreman 4.00 Skilled Workers 2.00 Common Laborer 4.00 Tools Set	120.00	138.00	129.00	0.267
<b>025 450</b>	<b>SURFACING</b>						
<b>025 458</b>	<b>SEALCOATING:</b>						
025 458-0320	Surfacing,including surface preparation,cleaing,& 2 coat of coal tar pitch emulsion or petroleum resistant,for surfaces upto 8500 m2	SQM	0.125 Labor Foreman 2.000 Common Laborer 1.00 Truck Driver 1.00 Asphalt Tanker	2,111.00	2,428.00	2,269.50	0.004
025 458-1900	Surfacing,asphalt treatment,single course,small area 1.4 L/m2 asphalt material,11 kg/m2 aggregate		0.375 Labor Foreman 1.000 Surveyor 7.000 Laborers 3.000 Equip. operator 1.000 Asphalt Paver 1.000 Tandem Roller, 9 Ton 1.000 Roller, Pneumatic Wheel	2,200.00	2,530.00	2,365.00	0.011
<b>025 500</b>	<b>BRIDGES</b>						
<b>025 504</b>	<b>BRIDGES:</b>						
025 504-0050	Pedestrian bridge,not including foundations,precast concrete, 2.4 m wide,18 m span	SQM	1.000 Struc. Steel Foreman 6.000 Struc. Steel Workers 1.000 Equip. Operator (Crane) 1.000 Equip. Operator (piler) 1.000 Crane, 135 ton, truck mtd	18.00	21.00	19.50	0.444
025 504-0400	Pedestrian bridge,not including foundations,steel trussed or arched spans, 2.4 m wide,15 m span			28.00	32.00	30.00	0.268
025 504-0700	Pedestrian bridge,not including foundations,steel trussed or arched spans, 2.4 m wide, 30 m span	↓	↓	36.00	41.00	38.50	0.002
<b>025 800</b>	<b>PAVEMENT MARKING</b>						
<b>025 804</b>	<b>PAINTING LINES:</b>						



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CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D.O. MIN.	D.O. MAX.	D.O. AVRG	AVRG. E.H.
025 804-0020	Pavement marking,including layout,painting lines,latex,white or yellow,150 mm wide	LM	0.125 Labor Foreman 1.000 Surveyor 1.000 Common Laborer 1.000 Truck Driver 1.000 Truck Paint Striper	2,500.00	2,875.00	2,687.50	0.003
025 804-0500	Pavement marking,painting lines,latex,white or yellow, 200 mm wide			2,250.00	2,588.00	2,419.00	0.004
025 804-0620	Pavement marking,painting arrows or gore lines			175.00	201.00	188.00	0.046
025 804-0730	Pavement marking including layout,painting thermoplastic white or yellow lines, 150 mm wide			3,200.00	3,680.00	3,440.00	0.003
025 804-0750	Pavement marking including,painting thermoplastic white or yellow lines, 300 mm wide			1,800.00	2,070.00	1,935.00	0.004
025 804-0760	Pavement marking ,painting thermoplastic white or yellow arrow	SCM		185.00	213.00	199.00	0.043
025 804-0800	Parking stall marking,latex paint	STALL		650.00	748.00	699.00	0.012
025 804-1000	Pavement marking,numbers or letter	"		120.00	138.00	129.00	0.067
<b>026 PIPED UTILITIES</b>							
<b>026 010 PIPED UTILITIES</b>							
<b>026 012 BEDDING:</b>							
026 012-0050	Bedding for utility lines,not including compaction,crushed run gravel	CUM	2 Laborers 1 Equip. Oper. (light) 1 Backhoe Loader,50HP	200.00	230.00	215.00	0.040
026 012-0200	Bedding for utility lines,not including compaction,sand	"	"	20.00	23.00	21.50	0.400
026 012-0500	Bedding compaction in trench	CUM	1 Building Laborer 1 Gas Eng. Power Tool	30.00	35.00	32.50	0.267
<b>026 014 EXCAVATION AND BACKFILL: See division 022-204&amp;254</b>							
026 014-0100	Hand excavate and trim for pipe bells after trench excavation,pipe size 200 mm	LM	1.000 Common Laborer 1.000 Tool Set	36.00	41.00	38.50	0.222
026 014-0300	Hand excavate and trim for pipe bells after trench excavation,pipe size 450 mm	"	"	28.00	32.00	30.00	0.286
<b>026 050 MANHOLES &amp; CLEANOUTS</b>							
<b>026 054 UTILITY VAULTS:</b>							
026 054-0100	Utility manhole or vault,precast concrete,150 mm thick,size 1.8 m x 3 m x 1.8 m high,inside dimensions	EA	0.125 Labor Foreman 4.000 Laborers 0.500 Equip. Oper. (crane) 0.500 Crane 23 ton	1.00	1.00	1.00	4.000
026 054-0150	Utility manhole or vault,precast concrete,150 mm thick,size 1.5 m x 3.7 m x 1.8 m high,inside dimensions		"	1.00	1.00	1.00	4.000
026 054-0300	Utility manhole or vault,precast concrete, 150 mm thick,size 2.4 m x4.3 m x 2 m high,inside dimensions		0.125 Labor Foreman 4.000 Laborers 0.500 Equip. Oper. (crane) 0.500 Crane 23 ton	0.50	0.60	0.55	8.000
026 054-0310	Utility manhole or vault,cast in place,150 mm thick,size 1.8 m x3 m x 1.8 m high,inside dimensions		"	1.00	1.00	1.00	4.000
026 054-0320	Utility manhole or vault,cast in place,150 mm thick,size 1.5 m x3.7 m x 1.8 m high,inside dimensions		0.250 Skilled Foreman 5.000 carpenters 1.000 Steel Foker 0.125 Cement Finisher 3.000 Common Laborers 0.500 Equip. Operator 0.125 Gas Engine Vibrator 0.125 Concrete Pump small & transit mixer 0.375 Crane 23 ton 0.125 Bed Truck 4.000 Power Tools	0.75	1.00	0.88	50.667
026 054-0340	Utility manhole or vault,cast in place,150 mm thick,size 2.4 m x4.3 m x 2 m high,inside dimensions		"	0.40	0.50	0.45	95.000
<b>026 100 PIPE &amp; FITTINGS</b>							
<b>026 104 PIPE INSULATION:</b>							
026 104-0100	Pipe insulation,calcium silicate, 25 mm thick,100 mm diameter	LM	1 Asbestos worker 1 Asbestos Helper 1 Tools Sets	40.00	46.00	43.00	0.200
026 104-0140	Pipe insulation,calcium silicate, 25 mm thick,150 mm diameter			26.67	31.00	28.84	0.300
026 104-0160	Pipe insulation,calcium silicate, 38 mm thick, 200 mm diameter			24.00	28.00	26.00	0.333
026 104-0240	Pipe insulation,calcium silicate, 38 mm thick, 400 mm diameter			19.20	22.00	20.60	0.417
026 104-0400	Pipe insulation,calcium silicate, 50 mm thick,100 mm diameter			34.00	39.00	36.50	0.235
026 104-0600	Pipe insulation,calcium silicate, 50 mm thick, 600 mm diameter			15.30	18.00	16.65	0.523
026 104-0700	Pipe insulation,calcium silicate, 80 mm thick,100 mm diameter			24.00	28.00	26.00	0.333
026 104-0760	Pipe insulation,calcium silicate, 80mm thick, 200 mm diameter			16.00	18.00	17.00	0.500
026 104-0900	Pipe insulation,calcium silicate, 80 mm thick, 600 mm diameter			10.71	12.00	11.36	0.747
026 104-1020	Pipe insulation,fiberglass, 25 mm thick,100 mm diameter			40.00	46.00	43.00	0.200
026 104-1080	Pipe insulation,fiberglass, 25 mm thick, 200 mm diameter			25.00	29.00	27.00	0.320
026 104-1220	Pipe insulation,fiberglass, 25 mm thick, 600 mm diameter			16.00	18.00	17.00	0.500

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CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D.O. MIN.	D.O. MAX.	D.O. AVRG	AVRG. E.H.
026 104-1300	Pipe insulation, fiberglass, 40 mm thick, 100 mm diameter			32.00	37.00	34.50	0.250
026 104-1350	Pipe insulation, fiberglass, 40 mm thick, 200 mm diameter			21.60	25.00	23.30	0.370
026 104-1700	Pipe insulation, fiberglass, 50 mm thick, 300 mm diameter	LM	1 Asbestos worker 1 Asbestos Helper 1 Tools Set	18.36	21.00	19.68	0.436
026 104-1800	Pipe insulation, fiberglass, 50 mm thick, 600 mm diameter	*	*	15.30	18.00	16.65	0.523
<b>026 400</b>	<b>VALVES &amp; COCKS</b>						
<b>026 404</b>	<b>PIPING VALVES: Water distribution, see also div.151-900</b>						
026 404-3100	Piping valve, butterfly with boxes, cast iron, mechanical joint, 100 mm diameter (4")	EA	0.125 Skilled Foreman 1.000 Skilled worker 1.000 Plumber Apprentice 1.000 Tools Set	3.00	3.00	3.00	2.667
026 404-3180	Piping valve, butterfly with boxes, cast iron, mechanical joint, 200 mm diameter (8")		0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 0.500 Equip. Operator 0.500 Crane 11 ton 1.000 Tools Set	2.25	3.00	2.63	5.333
026 404-3340	Piping valve, butterfly with boxes, cast iron, mechanical joint, 300 mm diameter (12")			1.75	2.00	1.88	6.857
026 404-3500	Piping valve, butterfly with boxes, cast iron, mechanical joint, 600 mm diameter (24")			0.35	0.50	0.43	34.286
026 404-3610	Piping valve, butterfly with boxes, cast iron, mechanical joint, & with lever operator size 100 mm		0.125 Skilled Foreman 1.000 Skilled worker 1.000 Plumber Apprentice 1.000 Tools Set	3.00	3.00	3.00	2.667
026 404-3616	Piping valve, butterfly with boxes, cast iron, mechanical joint, & with lever operator size 200 mm		0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 0.500 Equip. Operator 0.500 Crane 11 ton 1.000 Tools Set	2.25	3.00	2.63	5.333
026 404-3620	Piping valve, butterfly with boxes, cast iron, mechanical joint, & with lever operator size 300 mm			1.75	2.00	1.88	6.857
026 404-3630	Piping valve, butterfly with boxes, cast iron, mechanical joint, & with lever operator size 600 mm			0.35	0.50	0.43	34.286
026 404-3710	Piping valve, check, flanged 100 mm diameter		0.125 Skilled Foreman 1.000 Skilled worker 1.000 Plumber Apprentice 1.000 Tools Set	3.00	3.00	3.00	2.667
026 404-3714	Piping valve, check, flanged 150 mm diameter			2.50	3.00	2.75	3.200
026 404-3716	Piping valve, check, flanged 200 mm diameter		0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 0.500 Equip. Operator 0.500 Crane 11 ton 1.000 Tools Set	2.25	3.00	2.63	5.333
026 404-3720	Piping valve, check, flanged 300 mm diameter			1.75	2.00	1.88	6.857
026 404-3730	Piping valve, check, flanged 600 mm diameter			0.35	0.50	0.43	34.286
026 404-3810	Piping valve, gate, flanged, 100 mm diameter		0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Plumber Apprentice 1.000 Tools Set	3.00	3.00	3.00	2.667
026 404-3814	Piping valve, gate, flanged, 150 mm diameter			2.50	3.00	2.75	3.200
026 404-3816	Piping valve, gate, flanged, 200 mm diameter		0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 0.500 Equip. Operator 0.500 Crane 11 ton 1.000 Tools Set	2.25	3.00	2.63	5.333
026 404-3820	Piping valve, gate, flanged, 300 mm diameter			1.75	2.00	1.88	6.857
026 404-3830	Piping valve, gate, flanged, 600 mm diameter			0.35	0.50	0.43	34.286
026 404-3842	Piping valve, gate, flanged with boxes, size 100 mm diameter		0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Plumber Apprentice 1.000 Tools Set	2.50	3.00	2.75	3.200
026 404-3844	Piping valve, gate, flanged with boxes, size 150 mm diameter			2.00	2.50	2.00	4.000
026 404-3846	Piping valve, gate, flanged with boxes, size 200 mm diameter		0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 0.500 Equip. Operator 0.500 Crane 11 ton 1.000 Tools Set	1.80	2.00	1.90	6.667
026 404-3850	Piping valve, gate, flanged with boxes, size 300 mm diameter			1.40	2.00	1.70	8.000
026 404-3860	Piping valve, gate, flanged with boxes, size 600 mm diameter			0.30	0.50	0.40	40.000
026 404-3910	Piping valve, globe, flanged, iron body, size 100 mm diameter		0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Plumber Apprentice 1.000 Tools Set	5.00	6.00	5.50	1.600



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CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D.O. MIN.	D.O. MAX.	D.O. AVRG	AVRG. E.H.
026 404-3914	Piping valve,globe,flanged,iron body,size 150 mm diameter			4.50	5.00	4.75	1.778
026 404-3916	Piping valve,globe,flanged,iron body,size 200 mm diameter		0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 0.500 Equip. Operator 0.500 Crane 11 ton 1.000 Tools Set	3.50	4.00	3.75	3.429
026 404-3920	Piping valve,globe,flanged,iron body,size 300 mm diameter			2.50	3.00	2.75	4.800
026 404-3930	Piping valve,globe,flanged,iron body,size 600 mm diameter	EA	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 0.500 Equip. Operator 0.500 Crane 11 ton 1.000 Tools Set	0.35	0.50	0.43	34.286
<b>026 450 HYDRANTS</b>							
<b>026 454 PIPING WATER DISTRIBUTION:</b>							
026 454-1140	Fire hydrants,two way mechanical joints,excavation and backfill not included,114 mm valve size, 0.9 m depth	EA	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 0.500 Equip. Operator 0.500 Crane 11 ton 1.000 Tools Set	6.00	7.00	6.50	2.000
026 454-1200	Fire hydrants,two way mechanical joints,excavation and backfill not included,114 mm valve size,1.4 m depth			5.00	6.00	5.50	2.400
026 454-1260	Fire hydrants,two way mechanical joints,excavation and backfill not included,114 mm valve size,1.8 m depth			4.00	5.00	4.50	3.000
026 454-1300	Fire hydrants,two way mechanical joints,excavation and backfill not included,114 mm valve size,2.1 m depth			3.50	4.00	3.75	3.429
026 454-2080	Fire hydrants,two way mechanical joints,excavation and backfill not included,133 mm valve size,1.2 m depth			5.00	6.00	5.50	2.400
026 454-2160	Fire hydrants,two way mechanical joints,excavation and backfill not included,133 mm valve size,1.8 m depth			4.00	5.00	4.50	3.000
026 454-2320	Fire hydrants,two way mechanical joints,excavation and backfill not included,133 mm valve size, 3 m depth	EA	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 0.500 Equip. Operator 0.500 Crane 11 ton 1.000 Tools Set	3.00	3.00	3.00	4.000
026 454-2400	Hydrant,low barrel extensions with stems, 300 mm		0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Plumber Apprentice 1.000 Tools Set	8.00	9.00	8.50	1.000
026 454-2480	Hydrant,low barrel extensions with stems, 900 mm			7.00	8.00	7.50	1.143
026 454-2520	Hydrant,low barrel extensions with stems,1200 mm			6.00	7.00	6.50	1.333
026 454-5020	Hydrant,indicating post,adjustable, valve size 100 mm to 350 mm,1.2m bury		0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 0.500 Equip. Operator 0.500 Crane 11 ton 1.000 Tools Set	6.00	7.00	6.50	2.000
026 454-5060	Hydrant,indicating post,adjustable, valve size 100 mm to 350 mm, 2.5 m bury			4.00	5.00	4.50	3.000
026 454-5080	Hydrant,indicating post,adjustable, valve size 100 mm to 350 mm, 3 m bury			3.50	4.00	3.75	3.429
026 454-5540	Hydrant indicator post,non-adjustable, valve size 100 mm to 350 mm,1.2 m bury			5.50	6.00	5.75	2.182
<b>026 650 WATER SYSTEMS</b>							
<b>026 686 PIPING WATER DISTRIBUTION: Pipe laid in trench,excavation and backfill not included</b>							
026 686-1410	Water pipings,ductile iron cement lined,mechanical joints,sections 5.5 m long,size 100 mm (4")	EA	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Plumber Apprentice 1.000 Tool Set	32.37	37.00	34.69	0.247
026 686-1420	Water pipings,ductile iron cement lined,mechanical joints,sections 5.5 m long,size 150 mm (6")		"	27.51	32.00	29.76	0.291
026 686-1430	Water pipings,ductile iron cement lined,mechanical joints,sections 5.5 m long,size 200 mm (8")		0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 0.500 Equip. Operator 0.500 Crane 11 ton 1.000 Tools Set	22.66	26.00	24.33	0.530
026 686-1450	Water pipings,ductile iron cement lined,mechanical joints,sections 5.5 m long,size 300 mm (12")			14.56	17.00	15.78	0.824
026 686-1470	Water pipings,ductile iron cement lined,mechanical joints,sections 5.5 m long,size 400 mm (16")			9.71	11.00	10.36	1.236
026 686-1490	Water pipings,ductile iron cement lined,mechanical joints,sections 5.5 m long,size 600 mm (24")		0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 0.500 Equip. Operator 0.500 Pipe Layer 1.000 Tools Set	7.12	8.00	7.56	1.685

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CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D.O. MIN.	D.O. MAX.	D.O. AVRG	AVRG. E.H.
026 686-1550	Water pipings, ductile iron cement lined, push on joints, sections 5.5 m long, size 100 mm (4")		0.125 Skilled Foreman 1.000 Skilled worker 1.000 Plumber Apprentice 1.000 Tools Set	36.00	41.00	38.50	0.222
026 686-1560	Water pipings, ductile iron cement lined, push on joints, sections 5.5 m long, size 150 mm (6")			32.00	37.00	34.50	0.250
026 686-1570	Water pipings, ductile iron cement lined, push on joints, sections 5.5 m long, size 200 mm (8")			28.00	32.00	30.00	0.286
026 686-1590	Water pipings, ductile iron cement lined, push on joints, sections 5.5 m long, size 300 mm (12")			16.00	18.00	17.00	0.500
026 686-1640	Water pipings, ductile iron cement lined, push on joints, sections 5.5 m long, size 600 mm (24")			8.00	9.00	8.50	1.000
026 686-2650	Water piping, PVC, class 160, standard dimensions, 38 mm diameter			60.00	69.00	64.50	0.133
026 686-2700	Water piping, PVC, Class 160, Standard Dimensions, 50 mm dia			50.00	58.00	54.00	0.160
026 686-2900	Water piping, PVC, class 160, standard dimensions, 150 mm diameter			36.00	41.00	38.50	0.222
026 686-2950	Water piping, PVC, class 160, standard dimensions, 200 mm diameter			28.00	32.00	30.00	0.286
026 686-4100	Drill & tap pressurized main 150mm main to service 25 thru 50 mm	EA	0.125 Skilled Foreman 1.000 Skilled worker 1.000 Plumber Apprentice 1.000 Tools Set	2.00	2.00	2.00	4.000
026 686-4150	Drill & tap pressurized main 200mm main to service 25 thru 50 mm			1.75	2.00	1.88	4.571
026 686-4600	Tap & insert gate valve, 200 mm, 4600mm main, 100 mm branch			1.50	2.00	1.75	5.333
026 686-8010	Fittings, ductile iron, mechanical joint, 90 deg. bend 100 mm diameter (4")			25.00	29.00	27.00	0.320
026 686-8020	Fittings, ductile iron, mechanical joint, 90 deg. bend 10 mm diameter (4")			15.00	17.00	16.00	0.533
026 686-8040	Fittings, ductile iron, mechanical joint, 90 deg. bend 200 mm diameter (8")			12.00	14.00	13.00	0.667
026 686-8080	Fittings, ductile iron, mechanical joint, 90 deg. bend 300 mm diameter (12")			10.00	12.00	11.00	0.800
026 686-8120	Fittings, ductile iron, mechanical joint, 90 deg. bend 400 mm diameter (16")			8.00	9.00	8.50	1.000
026 686-8180	Fittings, ductile iron, mechanical joint, 90 deg. bend 600 mm diameter (24")			3.00	3.00	3.00	2.667
026 686-8200	Fittings, ductile iron, way or tee, 100 mm diameter (4")			15.00	17.00	16.00	0.533
026 686-8220	Fittings, ductile iron, way or tee, 150 mm diameter (6")			10.00	12.00	11.00	0.800
026 686-8240	Fittings, ductile iron, way or tee, 200 mm diameter (8")			9.00	10.00	9.50	0.889
026 686-8280	Fittings, ductile iron, way or tee, 300 mm diameter (12")			7.00	8.00	7.50	1.143
026 686-8320	Fittings, ductile iron, way or tee, 400 mm diameter (16")			4.00	5.00	4.50	2.000
026 686-8380	Fittings, ductile iron, way or tee, 600 mm diameter (24")			2.00	2.00	2.00	4.000
026 686-8450	Ductile iron pipe fitting; decrease size 150 x 100 mm			7.00	8.00	7.50	1.143
026 686-8480	Ductile iron pipe fitting; decrease size 1300 x 150 mm			5.00	6.00	5.50	1.600
026 686-8510	Ductile iron pipe fitting; decrease size 600 x 150 mm			2.00	2.00	2.00	4.000
<b>026 700</b>	<b>WATER WELLS</b>						
<b>026 704</b>	<b>WELLS:</b>						
026 704-0100	Water well, domestic, drilled and cased, including casing, 100 mm to 150 mm diameter	LM	1.000 Skilled Foreman 1.000 Equip. Operator 4.000 Common Laborers 1.000 Truck Mounted Drill Rig 1.000 Light truck, 3.00 ton	8.00	9.00	8.50	2.000
026 704-0200	Water well, domestic, drilled and cased, including casing, 200 mm diameter			6.00	7.00	6.50	2.667
026 704-0800	Observation wells, 32 mm riser pipe			8.50	10.00	9.25	1.882
026 704-1300	Water well test, 100 mm diameter upto 14 m deep	EA		1.00	1.00	1.00	16.000
026 704-0200	Water well, gravel pack, including gravel, casing, seal, & filter, 600 mm dia.	LM		1.25	1.50	1.38	12.800
026 704-1900	Water pump, installed in wells to 30 m deep wells, 100mm submersible, 3 HP		0.125 Skilled Foreman 1.000 Skilled worker 1.000 Plumber Apprentice 1.000 Tools Set	0.85	1.00	0.93	9.412
026 704-3000	Well, water pump submersible, 150 mm, 25 HP, 210 GPM, installed in well upto 45 m deep			0.60	1.00	0.80	13.333
026 704-3100	Well, water pump submersible, 150 mm, 30 HP, 210 GPM, installed in well upto 150 m deep			0.50	1.00	0.75	16.000
<b>026 800</b>	<b>FUEL DISTRIBUTION</b>						
<b>026 804</b>	<b>GAS STATION PRODUCT LINE</b>						
026 804-0020	Primary containment pipe, fiberglass-reinforced, plastic pipe 4.5 m & 9 m lengths, 50 mm diameter	LM	0.125 Skilled Foreman 1.000 Skilled worker 1.000 Plumber Apprentice 1.000 Tools Set	42.00	48.00	45.00	0.190
026 804-0060	Primary containment pipe, fiberglass-reinforced, plastic pipe 4.5 m & 9 m lengths, 100 mm diameter			35.00	40.00	37.50	0.229
026 804-0130	Gas pipe fittings, elbow, 90 deg. & 45 deg., bell-ends, 100 mm diameter	EA		10.00	12.00	11.00	0.800
026 804-0220	Gas pipe fittings, tee, bell-ends, 100 mm diameter			8.00	9.00	8.50	1.000



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CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D.O. MIN.	D.O. MAX.	D.O. AVR.G.	AVRG. E.H.
026 804-0250	Gas pipe fittings, flanges bell ends, 100 mm diameter			10.00	12.00	11.00	0.800
026 804-0280	Gas pipe fittings, sleeve couplings, 100 mm diameter			8.00	9.00	8.50	1.000
026 804-0310	Gas pipe fittings, threaded adapters, 100 mm diameter			8.00	9.00	8.50	1.000
026 804-0340	Gas pipe fittings, reducer, 100 mm x 50 mm diameter			10.00	12.00	11.00	0.800
<b>026 852</b>	<b>GAS DISTRIBUTION SYSTEM</b>						
<b>026 852</b>	<b>GAS SERVICE &amp; DISTRIBUTION:</b>						
026 852-0100	Gas piping, not including excavation or back fill, polyethylene, 415 kPa, coils, 32 mm diameter, SDR 11	LM	0.125 Skilled Foreman 1.000 Skilled worker 1.000 Plumber Apprentice 1.000 Tools Set	75.00	85.00	80.50	0.107
026 852-0200	Gas piping, not including excavation or back fill, polyethylene, 415 kPa, coils, 75 mm diameter, SDR 11			60.00	69.00	64.50	0.133
026 852-0550	Gas piping, not including excavation or back fill, steel, schedule 40, plain end, tar coated & wrapped 25 mm diameter		0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Welder 1.000 Common Laborer 1.000 Electric Welding Machine	70.00	81.00	75.50	0.114
026 852-0600	Gas piping, not including excavation or back fill, steel, schedule 40, plain end, tar coated & wrapped 50 mm diameter			55.00	63.00	59.00	0.145
026 852-0700	Gas piping, not including excavation or back fill, steel, schedule 40, plain end, tar coated & wrapped 100 mm diameter	LM	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Welder 1.000 Common Laborer 1.000 Electric Welding Machine	72.00	83.00	77.50	0.111
026 852-0800	Gas piping, not including excavation or back fill, steel, schedule 40, plain end, tar coated & wrapped 150 mm diameter			48.00	55.00	51.50	0.167
026 852-6002	Gas piping, not including excavation or back fill, steel, schedule 80, plain end, tar coated & wrapped 100 mm diameter			18.00	21.00	19.50	0.444
026 852-6008	Gas piping, not including excavation or back fill, steel, schedule 80, plain end, tar coated & wrapped 200 mm diameter			14.00	16.00	15.00	0.571
026 852-8008	Gas pipe fittings, elbow, weld joint, standard weight 100 mm diameter			5.50	6.00	5.75	1.455
026 852-8040	Gas pipe fittings, elbow, weld joint, standard weight 600 mm diameter			0.85	1.00	0.93	9.412
026 852-8102	Gas pipe fittings, elbow, weld joint, extra heavy weight 100 mm diameter	EA		4.50	5.00	4.75	1.778
026 852-8122	Gas pipe fittings, elbow, weld joint, extra heavy weight 600 mm diameter			0.70	1.00	0.85	11.429
<b>026 858</b>	<b>PIPING, VALVES, GAS DISTRIBUTION</b>						
026 858-0140	Gas piping valves, gas stops, with or without checks 32 mm size	EA	0.125 Skilled Foreman 1.000 Skilled worker 1.000 Plumber Apprentice 1.000 Tools Set	20.00	23.00	21.50	0.400
026 858-0200	Gas piping valves, gas stops, with or without checks 50 mm size			13.00	15.00	14.00	0.615
026 858-0680	Gas piping valves, pressure regulator, iron and bronze 50 mm diameter			6.50	7.00	6.75	1.231
026 858-0740	Gas piping valves, pressure regulator, iron and bronze 100 mm diameter			3.00	3.00	3.00	2.667
026 858-0780	Gas piping valves, pressure regulator, iron and bronze 150 mm diameter			1.75		1.75	4.571
<b>027</b>	<b>SEWERAGE &amp; DRAINAGE</b>						
<b>027 100</b>	<b>SUBDRAINAGE SYSTEMS</b>						
<b>027 108</b>	<b>PIPING, SUBDRAINAGE, CONCRETE:</b>						
027 108-3020	Subdrainage piping, no excavation for fill, porous wall concrete pipe standard length 150 mm diameter	LM	0.125 Skilled Foreman 1.000 Skilled worker 1.000 Plumber Apprentice 1.000 Tools Set	56.00	64.00	60.00	0.143
027 108-3060	Subdrainage piping, no excavation for fill, porous wall concrete pipe standard length 300 mm diameter		0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 0.500 Equip. Operator 0.500 Crane 11 ton 1.000 Tool Set	48.00	55.00	51.50	0.250
027 108-3100	Subdrainage piping, no excavation for fill, porous wall concrete pipe standard length 450 mm diameter			30.00	35.00	32.50	0.400
<b>027 110</b>	<b>PIPING, SUBDRAINAGE, CORRUGATED METAL:</b>						
027 110-2020	Subdrainage piping, no excav. or fill, corrugated aluminum, perforated, 150 mm diameter, 18 gauge	LM	0.125 Skilled Foreman 1.000 Skilled worker 1.000 Plumber Apprentice 1.000 Tools Set	60.00	69.00	64.50	0.133
027 110-2240	Subdrainage piping, no excav. or fill, corrugated aluminum, perforated, 300 mm diameter, 16 gauge		0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 0.500 Equip. Operator 0.500 Crane 11 ton 1.000 Tool Set	45.00	52.00	48.50	0.267
027 110-4000	Subdrainage piping, no excav. or fill, corrugated steel, perforated, asphalt coated, 150 mm diameter, 18 gauge		0.125 Skilled Foreman 1.000 Skilled worker 1.000 Plumber Apprentice 1.000 Tools Set	60.00	69.00	64.50	0.133

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CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D.O. MIN.	D.O. MAX.	D.O. AVRG.	AVRG. E.H.
027 110-4050	Subdrainage piping, no excav. or fill, corrugated steel, perforated, asphalt coated, 300 mm diameter, 16 gauge		0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 0.500 Equip. Operator 0.500 Crane 11 ton 1.000 Tool Set	45.00	52.00	48.50	0.267
<b>027 112</b>	<b>PIPING, SUBDRAINAGE, VITRIFIED CLAY:</b>						
027 112-3020	Subdrainage piping, no excav. or fill, vitrified clay perforated, 1.5 m length, 150 mm diameter	LM	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Plumber Apprentice 1.000 Tool Set	63.00	72.00	67.50	0.127
027 112-3060	Subdrainage piping, no excav. or fill, vitrified clay perforated, 1.5 m length, 300 mm diameter		0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 0.500 Equip. Operator 0.500 Crane 11 ton 1.000 Tool Set	48.00	55.00	51.50	0.250
<b>027 150</b>	<b>SEWAGE SYSTEMS</b>						
<b>027 152</b>	<b>CATCH BASINS OR MANHOLES:</b>						
027 152-0800	Manhole without frame & covers, concrete cast in place 1.2 m x 1.2 m x 0.2 m thick & 1.2 m deep	EA	0.250 Skilled Foreman 5.000 carpenters 1.000 Steel Fitter 0.125 Cement Finisher 3.000 Common Laborers 0.500 Equip. Operator 0.125 Gas Engine Vibrator 0.125 Concrete Pump small & transit mixer 0.375 Crane 23 ton 0.125 Bed Truck 4.000 Power Tools	1.65	2.00	1.83	23.030
027 152-1000	Manhole without frame & covers, concrete cast in place 1.2 m x 1.2 m x 0.2 m thick & 2.4 m deep			1.10	1.00	1.05	34.545
027 152-1100	Manhole depth over 2.4 m add to above labor cost for every extra meter of depth.			3.29	4.00	3.65	11.550
027 152-1600	Manhole frames & covers, C.I., 600 mm square, 227 kg		0.125 Skilled Foreman 2.000 Common Laborers 0.500 Equip. Operator 5000 Backhoe Loader, 50 HP	5.50	6.00	5.75	0.727
027 152-1800	Manhole frames & covers, C.I., light traffic, 450 mm, diameter, 45 kg			7.00	8.00	7.50	0.571
027 152-2100	Manhole frames & covers, C.I., heavy traffic, 600 mm, diameter, 181 kg			5.50	6.00	5.75	0.727
027 152-2500	Manhole frames & covers, C.I., water tight, 600 mm, diameter, 160 kg			5.50	6.00	5.75	0.727
<b>027 162</b>	<b>PIPING, DRAINAGE &amp; SEWAGE, CONCRETE:</b>						
027 162-1010	Sewer drainage, concrete pipe no excav. or fill, non-reinforced, extra strength, tongue & groove, 150 mm diameter	LM	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Plumber Apprentice 1.000 Tool Set	24.00	28.00	26.00	0.333
027 162-1040	Sewer drainage, concrete pipe no excav. or fill, non-reinforced, extra strength, tongue & groove 300 mm diameter			27.00	31.00	29.00	0.444
027 162-1080	Sewer drainage, concrete pipe no excav. or fill, non-reinforced, extra strength, 600 mm diameter		0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 0.500 Equip. Operator 0.500 Crane 11 ton 1.000 Tool Set	26.00	30.00	28.00	0.462
027 162-2240	Concrete reinforced culvert, size 600 mm diameter, with gaskets	LM	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 0.500 Equip. Operator 0.500 Crane 11 ton 1.000 Tool Set	18.00	21.00	19.50	0.667
027 162-2290	Concrete reinforced culvert, size 1.2 m diameter, with gaskets			6.00	7.00	6.50	2.000
027 162-2310	Concrete reinforced culvert, size 1.8 m diameter, with gaskets			3.50	4.00	3.75	3.429
027 162-2310	Concrete reinforced culvert, size 2.1 m diameter, with gaskets			3.00	3.00	3.00	4.000
027 162-2310	Concrete reinforced culvert, size 2.4 m diameter, with gaskets			2.50	3.00	2.75	4.800
<b>027 164</b>	<b>PIPING, STORM DRAINAGE, CORRUGATED METAL:</b>						
027 164-2040	Sewer / drainage piping; no excav. or fill, corrugated metal, galvanized or aluminum, bituminous coated with paved invert, 6 mm lengths, 200 mm diameter, 16 ga.	LM	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 0.500 Equip. Operator 0.500 Crane 11 ton 1.000 Tool Set	56.00	64.00	60.00	0.214
027 164-2140	Sewer / drainage piping; no excav. or fill, corrugated metal, galvanized or aluminum, bituminous coated with paved invert, 6 mm lengths, 600 mm diameter, 14 ga.			45.00	52.00	49.50	0.298
027 164-2200	Sewer / drainage piping; no excav. or fill, corrugated metal, galvanized or aluminum, bituminous coated with paved invert, 6 mm lengths, 1.2m diameter, 12 ga.		0.125 Skilled Foreman 1.000 Skilled Worker 2.000 Common Laborer 0.500 Equip. Operator 0.500 Pipe Layer 1.000 Tool Set	9.00	10.00	9.50	1.333



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CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D.O. MIN.	D.O. MAX.	D.O. AVRG	AVRG. E.H.
027 164-2240	Sewer / drainage piping; no excav. or fill, corrugated metal, galvanized or aluminum, bituminous coated with paved invert. 6 mm lengths, 1.8 m diameter, 8 ga.			4.00	5.00	4.50	3.000
<b>027 166</b>	<b>PIPING, DRAINAGE &amp; SEWAGE, PLASTIC:</b>						
027 166-1000	Sewer piping, no excav. or fill, plastic reinforced, general strength 100 mm diameter	LM	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Plumber Apprentice 1.000 Tools Set	35.00	40.00	37.50	0.229
027 166-1010	Sewer piping, no excav. or fill, plastic reinforced, general strength 150 mm diameter			27.00	31.00	29.00	0.296
027 166-1020	Sewer piping, no excav. or fill, plastic reinforced, general strength 200 mm diameter		0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 0.500 Equip. Operator 0.500 Crane 11 ton 1.000 Tools Set	27.00	31.00	29.00	0.444
027 166-1040	Sewer piping, no excav. or fill, plastic reinforced, general strength 300 mm diameter			18.00	21.00	19.50	0.667
027 166-5000	Sewer piping, no excav. or fill, plastic reinforced, high strength 100 mm diameter		0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Plumber Apprentice 1.000 Tools Set	35.00	40.00	37.50	0.229
027 166-5020	Sewer piping, no excav. or fill, plastic reinforced, high strength 200 mm diameter		0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 0.500 Equip. Operator 0.500 Crane 11 ton 1.000 Tools Set	27.00	31.00	29.00	0.444
027 166-5040	Sewer piping, no excav. or fill, plastic reinforced, high strength 300 mm diameter	LM	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 0.500 Equip. Operator 0.500 Crane 11 ton 1.000 Tools Set	18.00	21.00	19.50	0.667
027 166-9100	Plastic piping fittings; elbow 100 mm diameter		0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Plumber Apprentice 1.000 Tools Set	10.00	12.00	11.00	0.800
027 166-9140	Plastic piping fittings; elbow 300 mm diameter			4.00	5.00	4.50	2.000
027 166-9610	Plastic piping fittings; Wyes and tees; 100 mm diameter			6.50	7.00	6.75	1.231
027 166-9620	Plastic piping fittings; Wyes and tees; 150 mm diameter			4.50	5.00	4.75	1.778
027 166-9630	Plastic piping fittings; Wyes and tees; 200 mm diameter			4.00	5.00	4.50	2.000
027 166-9650	Plastic piping fittings; Wyes and tees; 300 mm diameter			3.50	4.00	3.75	2.286
<b>027 168</b>	<b>PIPING, DRAINAGE &amp; SEWAGE, POLYVINYL CHLORIDE:</b>						
027 168-2000	Sewer /Drainage piping, no excav. or fill, PVC, 3 m sections SDR 35, 100 mm dia.	LM	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Plumber Apprentice 1.000 Tools Set	70.00	81.00	75.50	0.114
027 168-2040	Sewer /Drainage piping, no excav. or fill, PVC, 3 m sections SDR 35, 150 mm dia.			54.00	62.00	58.00	0.148
027 168-2080	Sewer /Drainage piping, no excav. or fill, PVC, 3 m sections SDR 35, 200 mm dia.			50.00	58.00	54.00	0.160
027 168-2160	Sewer /Drainage piping, no excav. or fill, PVC, 3 m sections SDR 35, 300 mm dia.		0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 0.500 Equip. Operator 0.500 Crane 11 ton 1.000 Tools Set	42.00	48.00	45.00	0.286
027 168-3040	PVC piping fittings, bends or elbows, 100 mm diameter	EA	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Plumber Apprentice 1.000 Tools Set	10.00	12.00	11.00	0.800
027 168-3080	PVC piping fittings, bends or elbows, 150 mm diameter			7.50	9.00	8.25	1.067
027 168-3120	PVC piping fittings, tees, 100 mm diameter			6.50	7.00	6.75	1.231
027 168-3160	PVC piping fittings, tees, 150 mm diameter			5.50	6.00	5.75	1.455
027 168-3200	PVC piping fittings, wyes, 100 mm diameter	EA	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Plumber Apprentice 1.000 Tools Set	6.50	7.00	6.75	1.231
027 168-3240	PVC piping fittings, wyes, 150 mm diameter			5.50	6.00	5.75	1.455
<b>027 172</b>	<b>PIPING, DRAINAGE &amp; SEWAGE, VITRIFIED CLAY C700</b>						
027 172-5040	Sewer/drainage piping, no excav. or fill, vitrified clay, extra strength, compression joints, 200 mm diameter x 1.5 m long	LM	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 0.500 Equip. Operator 0.500 Crane 11 ton 1.000 Tools Set	36.00	41.00	38.50	0.333
027 172-5080	Sewer/drainage piping, no excav. or fill, vitrified clay, extra strength, compression joints, 300 mm diameter x 1.8 m long			27.00	31.00	29.00	0.444
027 172-5140	Sewer/drainage piping, no excav. or fill, vitrified clay, extra strength, compression joints, 600 mm diameter x 2.1 m long			9.00	10.00	9.50	1.333

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CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D.O. MIN.	D.O. MAX.	D.O. AVRG	AVRG. E.H.
027 172-5180	Sewer/drainage piping, no excav. or fill, vitrified clay, extra strength, compression joints, 900 mm diameter x 2.1 m long			4.00	5.00	4.50	3.000
027 172-8020	Vitrified clay fittings, 1/4 or 1/8 bend, plain joint, 100 mm diameter		0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Plumber Apprentice 1.000 Tools Set	25.00	29.00	27.00	0.320
027 172-8026	Vitrified clay fittings, 1/4 or 1/8 bend, plain joint, 200 mm diameter			20.00	23.00	21.50	0.400
027 172-8040	Vitrified clay fittings, 1/4 or 1/8 bend, plain joint, 900 mm diameter			2.00	2.00	2.00	4.000
027 172-8200	Vitrified clay fittings, wye & tee, plain joint, 100 mm diameter			20.00	23.00	21.50	0.400
027 172-8216	Vitrified clay fittings, wye & tee, plain joint, 200 mm diameter			15.00	17.00	16.00	0.533
027 172-8230	Vitrified clay fittings, wye & tee, plain joint, 900 mm diameter			0.50	0.60	0.55	16.000
<b>027 174</b>	<b>SEWAGE PUMPING STATIONS:</b>						
027 174-0020	Sewage pumping station, prefabricated steel or concrete or fiberglass, 180 GPM	TOTAL	1.000 Skilled Foreman 1.000 Labor Foreman 8.000 Skilled Workers 2.000 Common Laborers 0.250 Equip. Oper. (crane) 0.250 Crane 80 ton 1.000 Power Tools 1.000 Walk behind Power tools	0.15	0.20	0.18	120.000
027 174-0200	Sewage pumping station, prefabricated steel or concrete or fiberglass, 900 GPM		1.000 Skilled Foreman 1.000 Labor Foreman 8.000 Skilled Workers 2.000 Common Laborers 0.125 Equip. Oper. (crane) 0.125 Crane 80 ton 1.000 Power Tools 1.000 Walk behind Power tools	0.05	0.07	0.06	360.000
<b>027 176</b>	<b>SEWAGE TREATMENT:</b>						
027 176-0300	Sewage treatment, not including fencing or piping, steel package, blown air aeration plant, 57 CUM/day	CUM	1.000 Skilled Foreman 1.000 Labor Foreman 8.000 Skilled Workers 2.000 Common Laborers 0.125 Equip. Oper. (crane) 0.125 Crane 80 ton 1.000 Power Tools 1.000 Walk behind Power tools	1.50	2.00	1.75	12.000
027 176-0600	Sewage treatment, not including fencing or piping, steel package, blown air aeration plant, 378 CUM/day			2.00	2.00	2.00	9.000
027 176-0800	Sewage treatment, not including fencing or piping, steel package, blown air aeration plant, 1892 CUM/day			2.50	3.00	2.75	7.200
<b>027 350</b>	<b>WASTE WATER SYSTEM</b>						
<b>027 354</b>	<b>WASTEWATER TREATMENT SYSTEM:</b>						
027 354-0050	Wastewater treatment system, fiberglass, 4 CUM / capacity	EA	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 0.500 Equip. Operator 0.500 Crane 11 ton 1.000 Tools Set	0.70	1.00	0.85	17.143
027 354-0100	Wastewater treatment system, fiberglass, 5.5 CUM / capacity			0.50	0.60	0.55	24.000
<b>027 400</b>	<b>SEPTIC SYSTEMS</b>						
<b>027 404</b>	<b>SEPTIC TANKS:</b>						
027 404-0200	Septic tanks not included excav. or piping, precast 19 CUM	EA	0.125 Labor Foreman 4.000 Laborers 0.500 Equip. Oper. (crane) 0.500 Crane 23 ton	1.50	2.00	1.75	2.667
027 404-0300	Septic tanks not included excav. or piping, precast 57 CUM			0.45	0.70	0.58	8.889
027 404-0400	Septic tanks not included excav. or piping, precast 95 CUM			0.30	0.50	0.40	13.333
027 404-0500	Septic tanks not included excav. or piping, precast 150 CUM			0.20	0.30	0.25	20.000
027 404-0600	Septic tank, no excav. fill or piping, high density polythylene, 4 cum			7.00	8.00	7.50	0.571
027 404-0700	Septic tank, no excav. fill or piping, high density polythylene, 5.5 cum			4.50	5.00	4.75	0.889
027 404-0800	Septic tank, no excav. fill or piping, cast in place concrete size 57 cum	EA	0.250 Skilled Foreman 5.000 carpenters 1.000 Steel Fixer 0.125 Cement Finisher 3.000 Common Laborers 0.500 Equip. Operator 0.125 Gas Engine Vibrator 0.125 Concrete Pump small & transit mixer 0.375 Crane 23 ton 0.125 Bed Truck 4.000 Power Tools	0.15	0.25	0.20	256.757
027 404-1150	Septic system leaching field chambers, 4 m x 1.1 m x 0.4 m			16.00	18.00	17.00	2.375
<b>027 800</b>	<b>POWER &amp; COMMUNICATIONS:</b>						
	<i>See Div. 169100</i>						



## Division 02 : SITE WORK

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D.O. MIN.	D.O. MAX.	D.O. AVRG	AVRG. E.H.
<b>028</b>	<b>SITE IMPROVEMENTS</b>						
<b>028 100</b>	<b>IRRIGATION SYSTEMS</b>						
<b>028 104</b>	<b>SPRINKLER IRRIGATION SYSTEM:</b>						
028 104-0200	Sprinkler irrigation system, for lawn, fully automatic, 7.5 m diameter head at 4.6 m O.C. including piping average	EA	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Plumber Apprentice 1.000 Tools Set	25.00	29.00	27.00	0.320
028 104-0500	Sprinkler irrigation system, for lawn, fully automatic, 18 m diameter head at 4.6 m O.C. including piping average			15.00	17.00	16.00	0.533
028 104-2000	Sprinkler heads, pop-up spray, head & nozzle, heavy duty brass			32.00	37.00	34.50	0.250
028 104-3000	Sprinkler heads, riser mounted spray, low/medium volume, plastic / brass			32.00	37.00	34.50	0.250
028 104-4000	Sprinkler heads, pop-up impact sprinkler, body & case, plastic low/medium volume			32.00	37.00	34.50	0.250
028 104-5000	Sprinkler heads, quick coupling valve and key, brass, thread type			26.00	30.00	28.00	0.308
028 104-5400	Sprinkler heads, pop-up gear drive sprinkler, nozzle & case plastic, medium volume			32.00	37.00	34.50	0.250
028 104-8000	Sprinkler heads, riser mounted impact sprinkler, body, part or full circle, plastic, low/medium volume			26.00	30.00	28.00	0.308
028 104-9000	Sprinkler system control panel 6 zone			4.00	5.00	4.50	2.000
028 104-9100	Sprinkler system control panel 12 zone			2.75	3.00	2.88	2.909
028 104-9200	Sprinkler system control panel 24 zone			1.75	2.00	1.88	4.571
<b>028 200</b>	<b>FOUNTAINS</b>						
<b>028 204</b>	<b>FOUNTAINS:</b>						
028 204-0300	Fountain complete with fiberglass pool, piping & light 1.8 m diameter pool 0.6 m diameter spray ring	EA	0.125 Labor Foreman 1.000 Skilled Worker 2.000 Common Laborer 0.250 Truck Driver (light) 0.250 Flatbed Truck, 3 metric ton 0.250 Chain winch 1.000 Power Tool	1.50	2.00	1.75	8.000
028 204-0400	Fountain complete with fiberglass pool, piping & light 2.3 m diameter pool 1.2 m diameter spray ring	"	"	1.00	1.00	1.00	12.000
<b>028 300</b>	<b>FENCES &amp; GATES</b>						
<b>028 308</b>	<b>FENCE, CHAIN LINK INDUSTRIAL:</b>						
028 308-0200	Fence, chain link industrial, 1.8 m high including 3 strands barbed wire, 50 mm posts @ 3 m O.C., 40 mm top rail, braces, posts and 9 to 6 ga. wire, galvanized steel or aluminum steel	LM	0.125 Labor Foreman 1.000 Skilled Worker 2.000 Common Laborer 0.250 Truck Driver (light) 0.250 Flatbed Truck, 3 metric ton 1.000 Power Tool	30.00	35.00	32.50	0.333
028 308-0800	Fence, chain link industrial, 1.8 m high, no barbed wire, including 50 mm posts @ 3 m o.c., 40 mm top rail, braces & 6 ga. wire, galvanized steel or aluminum steel	"		32.00	37.00	34.50	0.313
028 308-1100	Fence galvanized steel corner posts 75 mm, no concrete	EA		24.00	28.00	26.00	0.417
028 308-1300	Fence galvanized or aluminum braces			45.00	52.00	48.50	0.222
028 308-1400	Industrial fence gate for 1.8 m high fence, 40 mm frame, 900 mm wide, galvanized steel or aluminum			6.50	7.00	6.75	1.538
028 308-2000	Fence, chainlink, industrial, 1.5 m high including posts @ 3 m. o.c. 40 mm top rail, braces & 9 ga. wire galvanized or aluminum steel			36.00	41.00	38.50	0.278
028 308-2400	Fence gate, 1.2 m wide, 1.5 m high, 50 mm frame, galvanized steel or aluminum			6.50	7.00	6.75	1.538
028 308-2700	Fence swinging gate, 3m high, 4.5 m wide motor operated, no wiring	OPENING		0.50	0.70	0.60	20.000
028 308-2800	Fence swinging gate, 3 m high, 9 m wide, motor operated, no wiring			0.30	0.50	0.40	33.333
028 308-2900	Fence swinging gate, 3 m high, 14 m wide, motor operated no wiring			0.25	0.40	0.33	40.000
028 308-5010	Fence, double swing gates, including posts & hardware 1.5 m high, 3.6 m opening			2.50	3.00	2.75	4.000
028 308-5020	Fence, double swing gates, including posts & hardware 1.5 m high, 6 m opening			2.00	2.00	2.00	5.000
028 308-5060	Fence, double swing gates, including posts & hardware 1.8 m high, 3.6 m opening			2.25	3.00	2.63	4.444
028 308-5120	Fence, double swing gates, including posts & hardware 3.6 m high, 3.6 m opening			0.75	1.00	0.88	13.333
<b>028 312</b>	<b>FENCE, CHAIN LINK RESIDENTIAL:</b>						
028 312-0920	Fence chain link, tennis court, 215 mm posts, 3 m O.C., 40 mm top rail, 3.6 m high, 11 gauge wire, 11 gauge wire	LM	0.125 Labor Foreman 1.000 Skilled Worker 2.000 Common Laborer 0.250 Truck Driver (light) 0.250 Flatbed Truck, 3 metric ton 1.000 Power Tool	20.00	23.00	21.50	0.500
<b>028 320</b>	<b>FENCE, MISC. METAL:</b>						

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CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D.O. MIN.	D.O. MAX.	D.O. AVRG	AVRG. E.H.
028 320-0300	Fence, chicken wire, galvanized steel, 12 ga., 50 mm x 100 mm, mesh, 1.5 m high	LM	0.125 Labor Foreman 1.000 Skilled Worker 2.000 Common Laborer 0.250 Truck Driver (light) 0.250 Flatbed Truck, 3 metric ton 1.000 Power Tool	45.00	52.00	48.50	0.222
<b>028 324</b>	<b>FENCE, WOOD:</b>						
028 324-1200	Fencewood, stockade, cedar, treated wood, 4 rails each 80 mm, 1.8 m high	LM	0.125 Labor Foreman 2.000 Skilled Workers 2.000 Power Tools	24.00	28.00	26.00	0.667
028 324-1250	Fencewood, gate, 1m wide, 1.8 m high	-	-	6.00	7.00	6.50	2.667
<b>028 400</b>	<b>WALK/ROAD/PARKING APPARATUS</b>						
<b>028 402</b>	<b>BOLLARDS:</b>						
028 402 2000	Bollards, cast iron, 300 mm base, 1 meter high, footing included	EA	0.125 Labor Foreman 2.000 Skilled Worker 3.000 Laborers 0.500 Equip. Operator light 0.5000 Gradall, 3.00 metric ton 1.000 Power tools	25.00	29.00	27.00	0.480
028 402 2100	Bollard, granite, 400 x 400 x mm base, 1 meter high, footing included, wiring not included			15.00	17.00	16.00	0.800
028 402 2200	Bollards, metal, lighted, 450 mm base, 1 meter high, footing included, wiring not included			22.00	25.00	23.50	0.545
028 402 2300	Bollards, pipe, metal filled with concrete, painted, 150 mm dia, 1.6 m high of which 0.6 m set in concrete footing			20.00	23.00	21.50	0.600
028 402 2400	Bollards, precast concrete, 300 x 300 x 900 mm, exposed aggregate, footing included.	↓	↓	22.00	25.00	23.50	0.545
<b>028 404</b>	<b>GUIDE RAIL:</b>						
028 404-0100	Guide rail, corrugated steel, galvanized steel posts, 2 m, O.C., 1.2 m high, double face	LM	0.125 Labor Foreman 2.000 Skilled Workers 2.000 Power Tools	65.00	75.00	70.00	0.246
028 404-0900	Guide rail, steel box beam, 150 mm x 150 mm, 1.2 m high, posts 3 m o.c		0.125 Labor Foreman 2.000 Skilled Worker 3.000 Laborers 0.500 Equip. Operator light 0.5000 Gradall, 3.00 metric ton 1.000 Power tools	20.00	23.00	21.50	0.600
028 404-1100	Median barrier, steel box beam, 150 mm x 200 mm			35.00	40.00	37.50	0.343
028 404-1400	Resilient guide fence and light shield, 1.8 m high, with 2 m high metal or wood square posts 3 m o.c			16.00	18.00	17.00	0.750
028 404-1500	Guidesail, concrete posts, individual, 2 m triangular or square	↓	↓	60.00	69.00	64.50	0.200
<b>028 408</b>	<b>PARKING BARRIERS:</b>						
028 408-1000	Wheel stops, precast concrete, including dowels, 150 mm x 250 mm x 1.8 m long	EA	0.125 Labor Foreman 2.000 Skilled Worker 3.000 Laborers 0.500 Equip. Operator light 0.5000 Gradall, 3.00 metric ton 1.000 Power tools	70.00	81.00	75.50	0.171
028 408-1100	Wheel stops, precast concrete, including dowels, 200 mm x 330 mm x 1.8 m long			70.00	81.00	75.50	0.171
028 408-1200	Wheel stops, thermoplastic 150 mm x 250 mm x 1.8 m long	↓	↓	80.00	92.00	86.00	0.150
<b>028 412</b>	<b>SIGNS:</b>						
028 412-1200	Guide and directional signs, 600 mm x 600 mm, reflectorized or high intensity with steel post 3 m high bolted	EA	0.125 Labor Foreman 2.000 Skilled Worker 3.000 Laborers 0.500 Equip. Operator light 0.5000 Gradall, 3.00 metric ton 1.000 Power tools	24.00	28.00	26.00	0.500
028 412-1800	Highway road signs, aluminum, over 2 SQM, reflectorized or high intensity, fixed on 2 each, 6 meter high posts & including footings	SQM		24.00	28.00	26.00	0.500
028 412-2200	Highway road signs, aluminum, 10 sqm, reflectorized or high intensity, suspended over road	-	↓	12.00	14.00	13.00	1.000
<b>028 416</b>	<b>STEPS:</b>						
028 416-0300	Bluestone steps treads, 300 mm x 50 mm or 300 mm x 40 mm including excav., borrow & concrete base	M RISER	0.125 Labor Foreman 2.000 Skilled Worker 3.000 Laborers 0.500 Equip. Operator light 0.5000 Gradall, 3.00 metric ton 1.000 Power tools	12.00	14.00	13.00	1.000
028 416-0500	Concrete, cast in place, See division 034-804						
<b>028 424</b>	<b>TRAFFIC SIGNALS:</b>						
028 424-0100	Traffic signals, pedestrian intersection, 8 signals, 2 each direction, programmed & with pedestrian pushbuttons and mast arms	TOTAL	0.125 Skilled Foreman 2.000 Electrician 2.000 Helpers 0.500 Equip Operator (crane) 1.000 Power tools 0.500 SP Crane, 4.5 ton	0.05	0.05	0.05	100.000
<b>028 600</b>	<b>PALYFIELD EQUIPMENT</b>						



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CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D.O. MIN.	D.O. MAX.	D.O. AVR.G.	AVRG. E.H.
<b>028 604</b>	<b>BACKSTOPS:</b>						
028 604-0300	Backstop for basketball, steel and with single pole	LM	0.125 Labor Foreman 2.00 Skilled Worker 3.00 Laborers 0.500 Equip. Operator light 0.5000 Gradall, 3.00 metric ton 1.000 Power tools	10.00	12.00	11.00	1.200
028 604-0400	Backstop for basketball, steel and double pole		"	7.00	8.00	7.50	1.714
028 604-0900	Backstop,wood, for handball or squash court, outdoor	↓	0.125 Labor Foreman 2.000 Skilled Workers 2.000 Power Tools	0.45	0.75	0.60	35.556
028 604-1000	Backstop,masonry, for handball or squash court outdoor	EA	"	0.30	0.50	0.40	53.333
<b>028 608</b>	<b>GOAL POSTS:</b>						
028 608-0100	Goal posts steel, double support,soccer, regulation	PAIR	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 0.500 Equip. Operator 0.500 Crane 11 ton 1.000 Tool Set	0.75	1.00	0.88	16.000
<b>028 612</b>	<b>PLAYGROUND EQUIPMENT:</b>						
028 612-0400	Playground Equipment,Horizontal monkey ladder, 4.3 m long, 2.3 m high.	EA	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 0.500 Equip. Operator 0.500 Crane 11 ton 1.000 Tool Set	2.50	3.00	2.75	4.800
028 612-0590	Playground Equipment,Parallel bars,3m long			2.50	3.00	2.75	4.800
028 612-1900	Playground Equipment,slides,stainless steel bed 450 mm wide, 3.6 m long, 1.8 m high			1.50	2.00	1.75	8.000
028 612-2000	Playground Equipment,slides,stainless steel bed 450 mm wide, 6 m long, 3 m high			1.25	1.00	1.13	9.600
028 612-2200	Playground Equipment,swings, pipe framed two end legs, 2.4 m high,plain seats, 4 seats			1.25	1.00	1.13	9.600
028 612-2300	Playground Equipment,swings, pipe framed two end legs, 2.4 m high,plain seats, 8 seats			0.85	1.00	0.93	14.118
028 612-2500	Playground Equipment,swings, pipe framed two end legs, 3.6 m high,plain seats, 4 seats	↓	↓	0.75	1.00	0.88	16.000
<b>028 620</b>	<b>PLATFORM PADDLE TENNIS COURT:</b>						
028 620-0100	Platform paddle tennis court complete with lighting,etc. Aluminum slate deck with aluminum frame	EA	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 0.500 Equip. Operator 0.500 Crane 11 ton 1.000 Tool Set	0.06	0.07	0.07	200.000
<b>028 700</b>	<b>SITE/STREET FURNISHINGS</b>						
<b>028 704</b>	<b>BENCHES:</b>						
028 704-0050	Benches park,precast concrete,with backs,wood rails,1.2 m long	EA	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 0.500 Equip. Operator 0.500 Crane 11 ton 1.000 Tool Set	5.00	6.00	5.50	2.400
028 704-0510	Benches park,steel pedestals with backs, 50 mm x 75mm wood rails, 2.4 m long			6.00	7.00	6.50	2.000
028 704-0610	Benches park,aluminum pedestals,with backs,aluminum slats, 4.6 m long	↓	↓	5.00	6.00	5.50	2.400
<b>028 708</b>	<b>BLEACHERS:</b>						
028 708-0050	Bleachers outdoor,protable, 3 to 5 tiers,to 90 m long minimum	Seat	0.125 Labor Foreman 2.000 Skilled Workers 2.000 Power Tools	105.00	121.00	113.00	0.152
028 708-0100	Bleachers outdoor,protable, 3 to 5 tiers,less than 5 m long prefabricated	"	"	75.00	86.00	80.50	0.213
<b>028 716</b>	<b>PLANTERS:</b>						
028 716-0050	Planters conc.,sandblasted,precast,1.2 m dia., 600 mm high	EA	0.125 Skilled Foreman 2.000 Common Laborer 1.000 Equip. Operator 1.000 Crane 11 ton	20.00	23.00	21.50	0.400
028 716-0400	Planters, fiber glass,circular,1.5 m dia., 600 mm high			15.00	17.00	16.00	0.533
028 716-0900	Planter /bench fiberglass, 1.8 m square, 900 mm high	↓	↓	15.00	17.00	16.00	0.533
<b>028 720</b>	<b>TRASH CLOSURE:</b>						
028 720-0300	Trash closure, wood, 3 m wide, 1.8 m high , 3 m long	EA	0.125 Skilled Foreman 2.000 Common Laborer 1.000 Equip. Operator 1.000 Crane 11 ton	3.00	3.00	3.00	2.667
028 720-0300	Trash closure, precast concrete, 1.2 m wide, 1.2 m high , 1.5 m long	"	"	3.00	3.00	3.00	2.667
<b>028 724</b>	<b>TRASH RECEPTACLE:</b>						

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CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D.O. MIN.	D.O. MAX.	D.O. AVRG.	AVRG. E.H.
028 724-0100	Trash receptacle, fiberglass, 600 mm square, 760 mm high	EA	0.125 Skilled Foreman 2.000 Common Laborer 1.000 Equip. Operator 1.000 Crane 11 ton	36.00	41.00	38.50	0.222
<b>029</b>	<b>LANDSCAPING</b>						
<b>029 100</b>	<b>SHRUB/TREE TRANSPLANTING</b>						
<b>029 104</b>	<b>TREE GUYING:</b>						
029 104-0100	Tree guying including stakes, guy wire and wrap less than 75 mm caliper, 2 stakes	EA	0.125 Labor Foreman 2.000 Common Laborer 2.000 Tools Set	25.00	29.00	27.00	0.640
029 104-1300	Tree guying including arrowhead anchor, cable, turnbuckles and wrap 150 mm caliper, 150 mm anchors			9.00	10.00	9.50	1.778
029 104-1400	Tree guying including arrowhead anchor, cable, turnbuckles and wrap 200 mm caliper, 200 mm anchors			6.00	7.00	6.50	2.667
<b>029 200</b>	<b>SOIL PREPARATION</b>						
<b>029 204</b>	<b>LAWN BED PREPARATION:</b>						
029 204-0200	Rake topsoil, site material, harley rock rake, adverse	SQM	0.125 Labor Foreman 2.000 Laborers 1.000 Equip. Operator 1.000 Backhoe Loader 85 HP	500.00	575.00	537.50	0.016
029 204-1050	Remove topsoil & pile on site 75 HP dozer, 150 mm deep, 100 m haul		1.000 Equip. Operator 0.500 Laborer 1.000 Dozer, 75 HP	707.00	813.00	760.00	0.011
029 204-1100	Remove topsoil & pile on site 75 HP dozer, 300 mm deep, 15 m haul			1,050.00	1,208.00	1,129.00	0.008
029 204-1150	Remove topsoil & pile on site 75 HP dozer, 300 mm deep, 90 m haul			353.00	406.00	379.50	0.023
029 204-1920	Remove rocks & debris from grade, with rock picker		1.000 Equip. Oper. (med.) 0.500 Laborer 1.000 F.E. Loader, W.M., D.76MS	10,000.00	11,500.00	10,750.00	0.001
029 204-3500	Screen topsoil from stockpile, vibrating screen, wet material (organic)	CUM	1.000 Equip. Oper. (med.) 0.500 Laborer 1.000 F.E. Loader, T.M., 1.81MS	125.00	144.00	134.50	0.064
029 204-3550	Screen topsoil from stockpile, vibrating screen, dry material (organic)			200.00	230.00	215.00	0.040
029 204-3800	Spread top soil, from stockpile, 150 mm deep, 15 meter far.		1.000 Equip. Operator 0.500 Laborer 1.000 Dozer, 75 HP	707.00	813.00	760.00	0.011
029 204-4100	Fertilizer, 0.11 kg/SQM, push spreader	SQM	1 Building Laborer 1 Gas Eng. Tool	10,000.00	11,500.00	10,750.00	0.001
029 204-4150	Fertilizer, 0.11 kg/SQM, tractor spreader		1.000 Equip. Operator (med.) 0.500 Laborer 1.000 Wheel Loader, 55 HP, W/ Attachment	60,000.00	69,000.00	64,500.00	0.000
029 204-4400	Spread manure 10 kg/m2, push spreader		1 Building Laborer 1 Gas Eng. Tool	1,500.00	1,725.00	1,612.50	0.005
029 204-4450	Spread manure 10 kg/m2, tractor spreader			3,000.00	3,450.00	3,225.00	0.010
029 204-6000	Tilling topsoil, 20 HP tractor, disk harrow, 150 mm deep		1.000 Equip. Operator (med.) 0.500 Laborer 1.000 Wheel Loader, 55 HP, W/ Attachment	25,000.00	28,750.00	26,875.00	0.000
<b>029 208</b>	<b>PLANT BED PREPARATION:</b>						
029 208-0100	Backfill planting pit, by hand, on site topsoil	CUM	1.000 Common Laborer 1.000 Tool Set	10.00	12.00	11.00	0.800
029 208-1000	Excavate planting pit, by hand, sandy soil			4.50	5.00	4.75	1.778
029 208-2000	Mix planting soil, including loam, manure, peat, by skid steer loader	CM	0.125 Skilled Foreman 2.000 Laborers 1.000 Equip. operator 1.000 Loader, Skid Steer	225.00	259.00	242.00	0.036
<b>029 300</b>	<b>LAWNS &amp; GRASSES</b>						
<b>029 304</b>	<b>SEEDING:</b>						
029 304-0100	Seeding mechanical, 240 kg/hectare	SQM	1 Building Laborer 1 Gas Eng. Tool	10,000.00	11,500.00	10,750.00	0.001
029 304-0600	Limestone, hand push spreader			14,000.00	16,100.00	15,050.00	0.001
029 304-0800	Grass seed hand push spreader, 0.022 kg/SQM			14,000.00	16,100.00	15,050.00	0.001
029 304-1900	Seeding by aerial operations, lawn seed	Hectare	1.000 Skilled Foreman 2.000 Common Laborers 1.000 Equip. Operator 1.000 Backhoe Loader 50 kW 1.000 Small helicopter w/pilot	16.00	18.00	17.00	1.000
<b>029 316</b>	<b>SODDING:</b>						
029 316-0050	Sodding, 250 mm deep, bluegrass sod, level ground, 750 SQM	SQM	0.125 Skilled Foreman 4.000 Common Laborers 1.000 Equip. Operator 1.000 Wheel Loader	600.00	690.00	645.00	0.013
029 316-0200	Sodding, 250 mm deep, bluegrass sod, level ground, 370 SQM			500.00	575.00	537.50	0.016
029 316-0201	Sodding, 250 mm deep, bluegrass sod, level ground, 100 SQM			450.00	510.00	484.50	0.018
029 316-0600	Sodding, 250 mm deep, bluegrass sod, sloped ground, 370 SQM			375.00	431.00	403.00	0.021
029 316-0700	Sodding, 250 mm deep, bluegrass sod, sloped ground, 100 SQM			300.00	345.00	322.50	0.027



**Division 02 : SITE WORK**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D.O. MIN.	D.O. MAX.	D.O. AVRG	AVRG. E.H.
<b>029 500</b>	<b>TREES/PLANTS/GROUND COVER</b>						
<b>029 504</b>	<b>GROUND COVER:</b>						
029 504-0600	Ground cover, stone chips, marble	KG	0.125 Labor Foreman 2.000 Common Laborer 2.000 Tools Set	9,000.00	10,350.00	9,675.00	0.002
029 504-0700	Ground gravel, hand cover pea gravel	CUM		16.00	18.00	17.00	1.000
<b>029 516</b>	<b>MULCH:</b>						
029 516-0100	Mulch aged barks, 75 mm deep, hand spread	SQM	1 Common Labor 1 Tool Set	65.00	75.00	70.00	0.123
029 516-0200	Mulch hay, 25 mm deep, hand spread			300.00	345.00	322.50	0.027
029 516-0800	Mulch peat moss, 25 mm deep, hand spread			600.00	690.00	645.00	0.013
<b>029 520</b>	<b>MOVING PLANTING:</b>						
029 520-0300	Planting, moving trees on site, 900 mm ball	EA	0.125 Labor Foreman 2.000 Common Laborer 2.000 Tools Set	2.00	2.00	2.00	8.000
029 520-0400	Planting, moving trees on site, 1500 mm ball			0.75	1.00	0.88	21.333
<b>029 524</b>	<b>PLANTING SHRUBS:</b>						
029 524-0100	Shrubs, broadleaf evergreen, planted in prepared beds	EA	0.125 Labor Foreman 2.000 Common Laborer 2.000 Tools Set	50.00	58.00	54.00	0.320
029 524-0200	Shrubs, azalea, 380 mm to 460 mm, container			50.00	58.00	54.00	0.320
029 524-0300	Shrubs, barberry, 230 mm to 300 mm, container			65.00	75.00	70.00	0.246
<b>029 528</b>	<b>PLANTING SHRUBS &amp; TREES :</b>						
029 528-0100	Shrubs and trees, evergreen, in prepared beds, balled and burlapped, 1.2 m to 1.5 m high	EA	0.125 Labor Foreman 1.000 Skilled Worker 2.000 Common Laborer 0.250 Truck Driver (light) 0.250 Flatbed Truck, 3 metric ton 1.000 Power Tool	16.00	18.00	17.00	0.625
029 528-0300	Shrubs and trees, evergreen, in prepared beds, balled and burlapped, 2.4 to 2.5 m high			10.00	12.00	11.00	1.000
029 528-0600	Shrubs and trees, evergreen, in prepared beds, balled and burlapped, upto 600mm high			45.00	52.00	48.50	0.222
029 528-0740	Shrubs and trees, evergreen, in prepared beds, balled and burlapped, pine black upto 900mm.			35.00	40.00	37.50	0.286
029 528-0741	Shrubs and trees, evergreen, in prepared beds, balled and burlapped, spruce, blue, 0.5 m to 0.6 m			45.00	52.00	48.50	0.222
<b>029 536</b>	<b>PLANTING TREES:</b>						
029 536-0100	Trees deciduous, in preparation beds, balled & burlapped, ash 50 mm caliper	EA	0.125 Labor Foreman 1.000 Skilled Worker 2.000 Common Laborer 0.250 Truck Driver (light) 0.250 Flatbed Truck, 3 metric ton 1.000 Power Tool	6.00	7.00	6.50	1.667
029 536-0200	Trees deciduous, in preparation beds, balled & burlapped, beech, 1.5 m to 1.8 m high			25.00	29.00	27.00	0.400
029 536-0600	Trees deciduous, in preparation beds, balled & burlapped, dogwood 1.2 m to 1.8 m high			25.00	29.00	27.00	0.400
029 536-1100	Trees deciduous, in preparation beds, balled & burlapped, honeylocust, 3m to 3.6m, 38 mm caliper			7.00	8.00	7.50	1.429
029 536-1400	Trees deciduous, in preparation beds, balled & burlapped, linden, 2.4 m to 3 m, 25 mm caliper			10.00	12.00	11.00	1.000
029 536-1600	Trees deciduous, in preparation beds, balled & burlapped, maple, red, 2.4 m to 3 m, 38 mm caliper	EA	0.125 Labor Foreman 1.000 Skilled Worker 2.000 Common Laborer 0.250 Truck Driver (light) 0.250 Flatbed Truck, 3 metric ton 1.000 Power Tool	7.00	8.00	7.50	1.429
029 536-2700	Trees deciduous, in preparation beds, balled & burlapped, tulip, 1.5m to 2.4m			25.00	29.00	27.00	0.400





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# Division 3

## Concrete

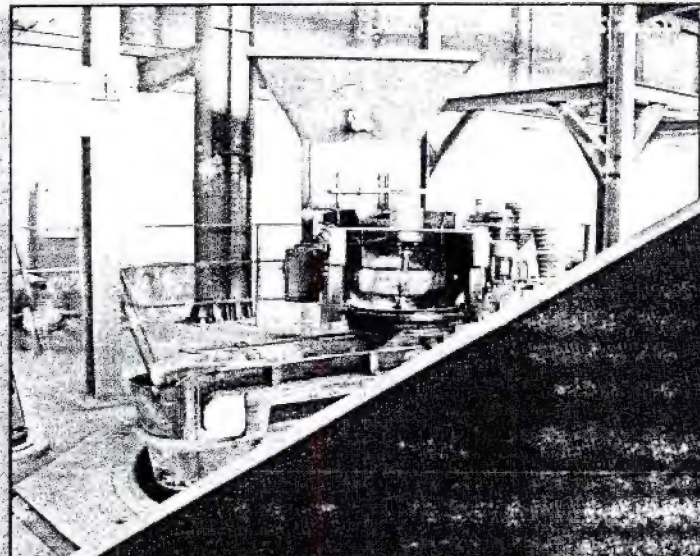
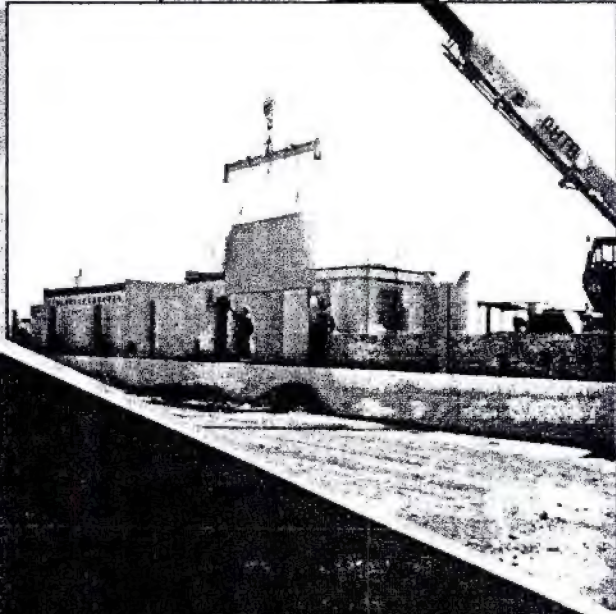
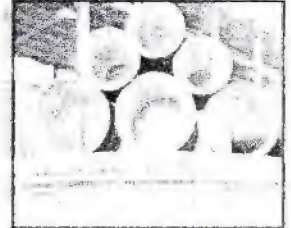
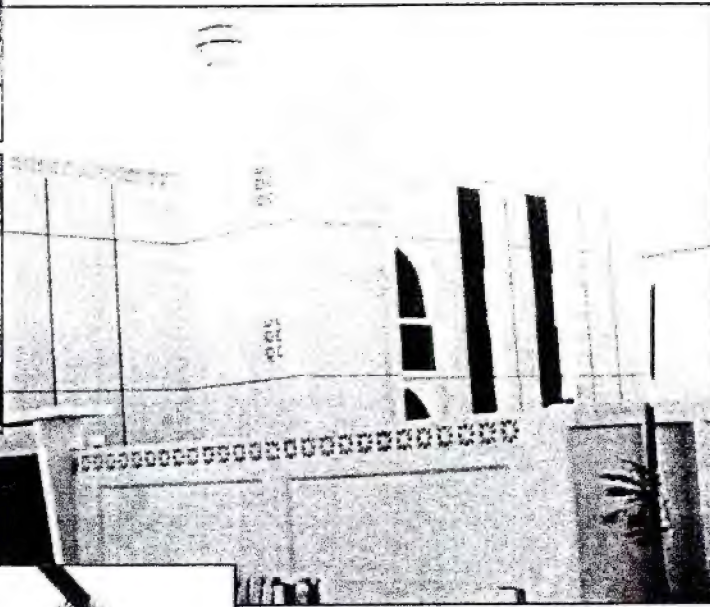
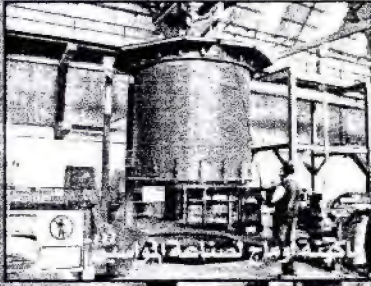
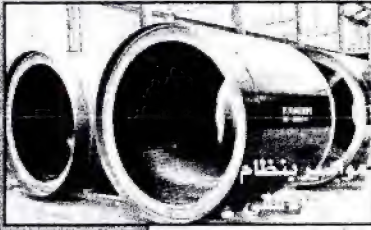




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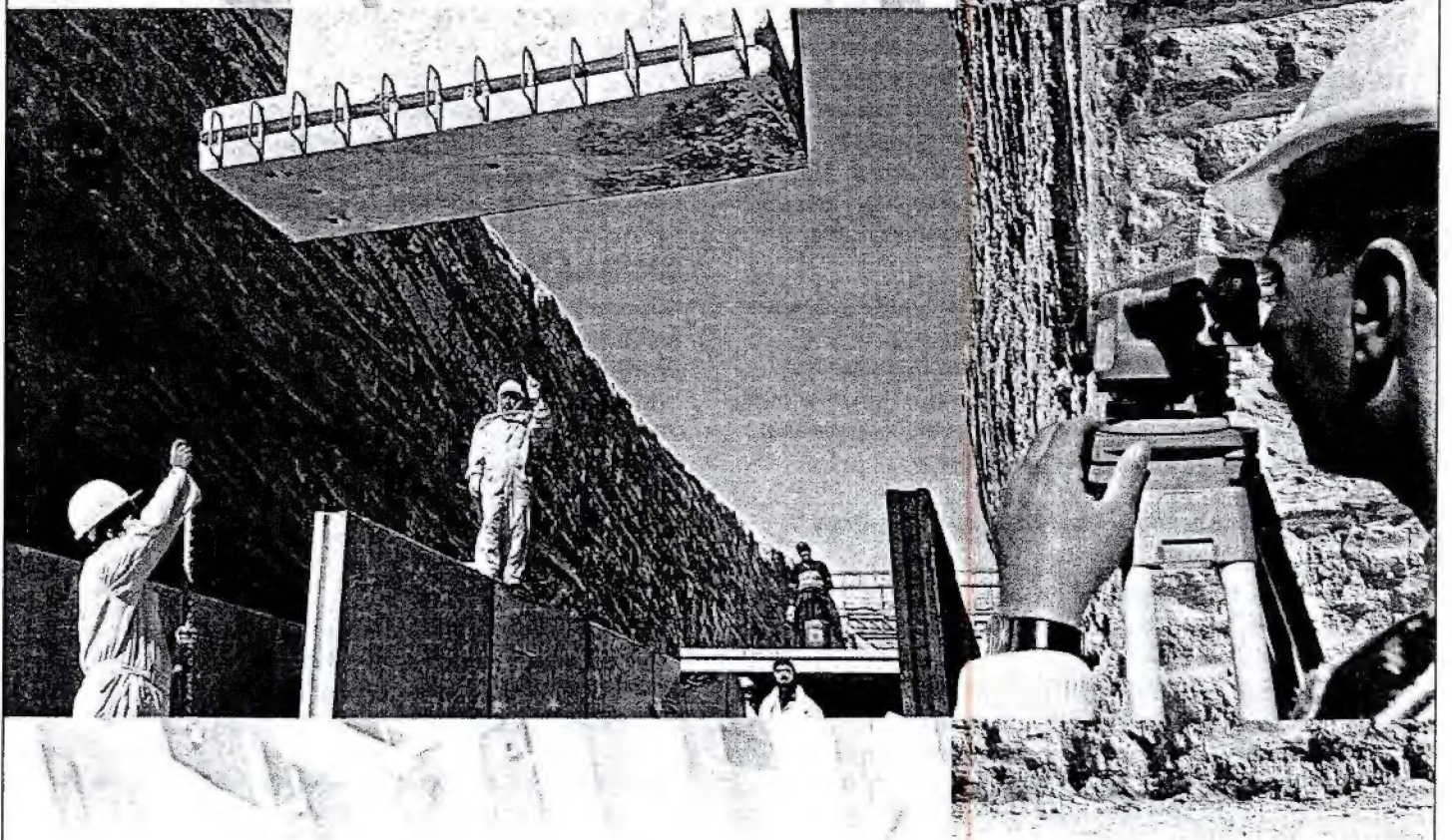
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الرياض : 01 491 0590  
فاكس : 01 491 5977



## Division 3

# Concrete

### Estimating Tips

#### General

Always obtain concrete prices from suppliers near the job site. Remember to add for waste, particularly for slabs and footings on grade.

#### 031 Concrete Formwork

A primary cost for concrete construction is forming. Most jobs today are constructed with prefabricated forms. The selection of the forms best suited for the job and the total square meter of forms required for efficient concrete forming and placing are key elements in estimating concrete construction. Enough forms must be available for erection to make efficient use of the concrete placing equipment and crew.

Concrete accessories for forming and placing depend upon the systems used. The productivity rate as shown in this book includes the form preparation, erecting, forms removal and cleaning. Concrete forms are usually estimated by computing the surface area of the form in contact with concrete.

Estimators shall focus on any special formwork requirements such as:

- Risers for stepped wall footings.
- Keyways, as grooves are usually formed in the top of footings.
- Design proper wall forms to withstand the horizontal pressure exerted by the flow of concrete.
- Curved walls require more studs and bracing.
- Bulkheads shall be considered for all opening in formwork, estimator shall allow an average of 0.06 M<sup>3</sup> form per square meter opening.
- Check for any setbacks for all wall foundations that extend above grade.
- Check for any continuous hunch in concrete wall forms.
- Using high early strength cement instead of ordinary portland cement will reduce the cost of forms in large jobs.
- Productivity rate for slab forms considers the use of adjustable sectional steel scaffolding units for shoring.

#### 032 Concrete Reinforcement

Ascertain that the reinforcing steel take-off has included all accessories, cutting, bending and an allowance for lapping, splicing and waste.

Estimator shall pay attention to steel bars supports with respect to rust prevention classification as being maximum, moderate or with no protection.

Estimator shall be aware that placing reinforcing steel in architectural concrete walls, having smaller sizes, horizontal, vertical short runs, and wired together in a costly operation.

#### 033 Cast-in-Place Concrete

When estimating structural concrete, pay particular attention to requirements for concrete additives, curing methods and surface treatments. Special consideration for climate, hot or cold, must be included in your estimate. Be sure to include requirements for concrete placing equipment and concrete finishing.

#### 034 Precast Concrete

The cost of hauling precast structural members is often an important factor. For this reason, it is important to get a quote from the nearest supplier.

Estimator shall consider additional forms for column depression at all column heads on the flat slabs. Estimator shall be aware that form work for stairs running with two (2) flights between floors and with an intermediate landing costs about 30% more than a straight flight run. Architectural concrete forms shall be priced based on the contractor know-how to detail them, including every piece of plywood, stud, wale, bolt, window boxes and lumbar for reveals.



# **DIVISION 03 : CONCRETE**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN	D. O. MAX	D. O. AVRG.	AVRG. E.H.
<b>031</b>	<b>CONCRETE FORMWORK</b>								
<b>030 100</b>	<b>STRUCT C.I.P. FORMWORK</b>								
<b>031 110</b>	<b>ACCESSORIES,ANCHOR BOLTS Incl. nut and washer</b>								
031 110-0200	Anchor bolt,including nut & washer,16 mm Diameter, 305 mm Long (5/8",12")	EA	1 Carpenter	8.00	0.00	60.000	69.000	64.500	0.000
031 110-0300	Anchor bolt,including nut & washer,16 mm Diameter, 610 mm Long			8.00	0.00	45.000	52.000	48.500	0.000
031 110-0500	Anchor bolt,including nut & washer, 20 mm Diameter, 610 mm Long			8.00	0.00	40.000	46.000	43.000	0.000
031 110-0700	Anchor bolt,including nut & washer, 22 mm Diameter, 610 mm Long			8.00	0.00	30.000	35.000	32.500	0.000
031 110-0800	Anchor bolt,including nut & washer, 24 mm Diameter, 305 mm Long (1",12")			8.00	0.00	42.000	48.000	45.000	0.000
031 110-0950	Anchor bolt,including nut & washer, 24 mm Diameter, 614 mm Long			8.00	0.00	18.000	21.000	19.500	0.000
<b>031 111</b>	<b>ANCHOR BOLTS with hex nuts and washers,zinc plated</b>								
031 111-0600	Anchor bolt with hex nut & washer,zinc plated,M8, 8 mm Diameter x 100 mm Long to 200 mm Long	EA	1 Carpenter	8.00	0.00	80.000	92.000	86.000	0.000
031 111-1270	Anchor bolt with hex nut & washer,zinc plated,M12, 12 mm Diameter x 320 mm Long			8.00	0.00	68.000	78.000	73.000	0.000
031 111-1670	Anchor bolt with hex nut & washer,zinc plated,M16, 16 mm Diameter x 320 mm Long			8.00	0.00	62.000	71.000	66.500	0.000
031 111-2070	Anchor bolt with hex nut & washer,zinc plated,M20, 20 mm Diameter x 400 mm Long			8.00	0.00	50.000	58.000	54.000	0.000
031 111-2450	Anchor bolt with hex nut & washer,zinc plated,M24, 24 mm Diameter x 320 mm Long			8.00	0.00	58.000	67.000	62.500	0.000
<b>031 112</b>	<b>ACCESSORIES,CHAMFER STRIPS:</b>								
031 112-2000	Chamfer strip,Polyvinyl chloride,15 mm wide with leg	LM	1 Carpenter	8.00	0.00	125.000	144.000	134.500	0.000
031 112-2200	Chamfer strip,Polyvinyl chloride, 20 mm chamfer with leg			8.00	0.00	120.000	138.000	129.000	0.000
031 112-2400	Chamfer strip,Polyvinyl chloride, 25 mm radius with leg			8.00	0.00	115.000	132.000	123.500	0.000
031 112-2800	Chamfer strip,Polyvinyl chloride, 30 mm radius			8.00	0.00	110.000	127.000	118.500	0.000
031 112-5200	Chamfer strip,steel 20 mm wide			8.00	0.00	100.000	115.000	107.500	0.000
031 112-5400	Chamfer strip,steel 25 mm wide			8.00	0.00	96.000	110.000	103.000	0.000
<b>031 114</b>	<b>ACCESSORIES COLUMN FORM:</b>								
031 114-1300	Column clamps adjustable 760 mm x 760 mm	SET	1 Carpenter	8.00	0.00	15.000	17.000	16.000	0.000
031 114-3300	Column clamps adjustable 1.5 m x 1.5 m			8.00	0.00	5.000	6.000	5.500	0.000
<b>031 116</b>	<b>ACCESSORIES,DOVETAIL ANCHOR SYSTEM:</b>								
031 116-0500	Dovetail,Anchor slot,filled, 24 ga	LM	1 Carpenter	8.00	0.00	82.000	106.000	99.000	0.000
031 116-0800	Dovetail,Anchor slot,Galvanized, 20 ga.			8.00	0.00	85.000	98.000	91.500	0.000
031 116-0800	Dovetail,Anchor slot, 454 gram copper, foam filled			8.00	0.00	80.000	92.000	86.000	0.000
031 116-0900	Dovetail,Anchor slot, 26 ga. stainless steel, foam filled			8.00	0.00	80.000	92.000	86.000	0.000
031 116-1200	Dovetail,Brck anchor,gals., 88 mm Long, 16 ga	100 PCS	1 Bricklayer	8.00	0.00	7.000	8.000	7.500	0.000
031 116-2100	Dovetail,Anchor Cavity wall,gals., 127 mm Long, 12 ga			8.00	0.00	7.000	8.000	7.500	0.000
031 116-3100	Dovetail,Furring anchors,corr.,gals., 38 mm Long, 12 ga.			8.00	0.00	7.000	8.000	7.500	0.000
031 116-6100	Dovetail,Stone anchors, 88 mm Long, gals., 6 mm x 25 mm wide			8.00	0.00	6.000	7.000	6.500	0.000
<b>031 122</b>	<b>ACCESSORIES,INSERTS:</b>								
031 122-2300	Inserts,Continuous slotted, 814 mm Long 6 ga	EA	1 Carpenter	8.00	0.00	50.000	58.000	54.000	0.000
031 122-2350	Inserts,Continuous slotted, 1.5 m Long 8 ga			8.00	0.00	45.000	52.000	48.500	0.000
<b>031 126</b>	<b>ACCESSORIES,SLEEVES AND CHASES:</b>								
031 126-0150	Sleeves & Chases,Plastic type,1 use, 229 mm Long, 100 mm dia.(4")	EA	1 Carpenter	8.00	0.00	75.000	86.000	80.500	0.000
031 126-0250	Sleeves & Chases,Plastic type,1 use, 229 mm Long, 300 mm dia.(12")			8.00	0.00	50.000	58.000	54.000	0.000
<b>031 132</b>	<b>EXPANSION JOINT</b>								
031 132-0010	Expansion Joint,Keyed cold joint, 24 ga.,incl stakes, 90 mm high	LM	1 Carpenter	8.00	0.00	50.000	58.000	54.000	0.000
031 132-0150	Expansion Joint,Keyed cold joint, 24 ga.,incl stakes, 190 mm high		1 Carpenter	8.00	0.00	45.000	52.000	48.500	0.000
031 132-0350	Expansion Joint,Poured asphalt, plain, 25 mm x 50 mm		1 Common Labor	8.00	0.00	110.000	127.000	118.500	0.000
031 132-0550	Expansion Joint,Neoprene,liquid,cold applied, 25 mm x 50 mm		1 Common Labor	8.00	0.00	110.000	127.000	118.500	0.000
031 132-0750	Expansion Joint,Polyurethane, 1 part, 13 mm x 25 mm		2 Common Labor	8.00	0.00	110.000	127.000	118.500	0.000
031 132-1150	Expansion Joint,Rubberized hot applied,fuel resistant, 25 mm x 50 mm			8.00	0.00	110.000	127.000	118.500	0.000
031 132-2000	Expansion Joint,Premolded,bituminous fiber,13 mm x 150 mm		1 Carpenter	8.00	0.00	120.000	136.000	129.000	0.000
031 132-2250	Expansion Joint,Cork with resin binder, 13 mm x 150 mm			8.00	0.00	96.000	110.000	103.000	0.000
031 132-2550	Expansion Joint,Neoprene sponge,closed cell, 25 mm x 300 mm			8.00	0.00	96.000	110.000	103.000	0.000
031 132-2750	Expansion Joint,Polyethylene foam,13 mm x 150 mm			8.00	0.00	96.000	110.000	103.000	0.000
031 132-3000	Expansion Joint,Polyethylene backer rod, 10 mm to 25 mm diameter			8.00	0.00	120.000	138.000	129.000	0.000
031 132-3100	Expansion Joint,Polyethylene backer rod, 25 mm dia. (1")			8.00	0.00	120.000	138.000	129.000	0.000
031 132-3800	Expansion Joint,Polyurethane foam,regular,closed cell, 25 mm x 300 mm			8.00	0.00	75.000	86.000	80.500	0.000
031 132-4300	Expansion Joint,Rubber,gray sponge 13 mm x 150 mm	LM	1 Carpenter	8.00	0.00	110.000	127.000	118.500	0.000
<b>031 138</b>	<b>FORMS IN PLACE, BEAMS AND GIRDERS:</b>								
031 138-0650	Forms in place,Beam and Girder,exterior spandrel, 305 mm wide,4 use	SQM CON-TACT AREA	0.125 Carpenter Foreman 4.000 Carpenters 2.000 Laborers 0.250 Equip. Operator 2.000 Power Tools 0.250 Truck Crane 35 Ton	51.00	18.00	19.460	22.000	20.730	0.925
031 138-1500	Forms in place,Exterior spandrel, 610 mm wide, 1 use			51.00	18.00	18.290	21.000	19.645	0.984



**DIVISION 03 : CONCRETE**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN	D. O. MAX	D. O. AVRG.	AVRG. E.H.
031 138-2150	Forms in place,Interior beams, 305 mm wide, 5 use			51.00	18.00	22.990	25.000	24.485	0.783
031 138-2500	Forms in place,Interior beams, 610mm wide, 1 use			51.00	18.00	20.900	24.000	22.450	0.867
031 138-3150	Forms in place,Beam and Girder,encasing steel frame,hung, 5 use			51.00	18.00	30.080	35.000	32.540	0.598
031 138-3650	Forms in place,Beam bottoms only, 610 mm wide, 5 use			51.00	18.00	27.740	32.000	29.870	0.649
031 138-4000	Forms in place,Beam sides only,vertical, 914 mm high, 1 use			51.00	18.00	29.570	34.000	31.785	0.609
031 138-4500	Forms in place,Sloped sides, 914 mm high, 1 use			51.00	18.00	22.670	25.000	24.335	0.794
031 138-5000	Forms in place,Upstanding beams, 914 mm high, 1 use			51.00	18.00	15.620	19.000	17.810	1.083
<b>031 142</b>	<b>FORMS IN PLACE, COLUMNS:</b>								
031 142-0500	Column form,Round fiberglass, 5 use/mo., 300 mm dia. 4.2 m high	LM	0.125 Carpenter Foreman 4.000 Carpenters 2.000 Laborers 0.250 Equip. Operator 2.000 Power Tools 0.250 Truck Crane 35 Ton	51.00	18.00	73.000	84.000	76.500	0.247
031 142-0650	Column form,Round fiberglass, 5 use/mo.,rent, 610 mm dia. 4.2 m high			51.00	18.00	64.900	74.000	69.900	0.281
031 142-0800	Column form,Round fiberglass, 5 use/mo., 760 mm dia. 4.2 m high			51.00	18.00	58.000	67.000	62.500	0.310
031 142-0950	Column form,Round fiberglass, 5 use/mo., 914 mm dia. 4.2 m high			51.00	18.00	54.700	63.000	58.850	0.329
031 142-1700	Column form,Round fiber tube,1 use, 400 mm dia. 4.2 m high			51.00	18.00	59.700	69.000	64.350	0.302
031 142-1800	Column form,Round fiber tube,1 use, 610 mm dia. 4.2 m high			51.00	18.00	55.000	63.000	59.000	0.327
031 142-1900	Column form,Round fiber tube,1 use, 914 mm dia. 4.2 m high			51.00	18.00	50.000	58.000	54.000	0.360
031 142-2000	Column form,Round fiber tube,1 use,1220 mm dia. 4.2 m high			51.00	18.00	29.300	34.000	31.650	0.614
031 142-3050	Column form,Round steel, 5 use/mo.,regular duty, 400 mm dia. 6 m high			51.00	18.00	43.500	50.000	46.750	0.414
031 142-3150	Column form,Round Steel, 5 use/mo., Heavy duty, 610 mm dia. 6 m high			51.00	18.00	30.300	35.000	32.650	0.594
031 142-3200	Column form,Round Steel, 5 use/mo., Heavy duty, 762 mm dia. 6 m high			51.00	18.00	25.800	30.000	27.900	0.698
031 142-3250	Column form,Round Steel, 5 use/mo., Heavy duty, 914 mm dia. 7.6 m high			51.00	18.00	22.800	26.000	24.300	0.796
031 142-3300	Column form,Round Steel, 5 use/mo., Heavy duty,1220 mm dia. 7.6 m high			51.00	18.00	18.200	21.000	19.600	0.989
031 142-3350	Column form,Round Steel, 4 use/mo.,Heavy duty,1525 mm dia. 8 m high		1.00 Carpenter Foreman 4.00 Carpenters 2.00 Laborers 0.50 Equip. Operator 1.00 Power Tools 0.50 Truck Crane 35 Ton	60.00	12.00	15.500	18.000	16.750	0.774
031 142-4000	Column form,Round Steel,Column capitals, 5 use/mo., 600 mm col, 1200 mm cap dia	EA		60.00	12.00	14.000	16.000	15.000	0.857
031 142-4100	Column form,Round Steel,Column capitals, 5 use/mo., 600 mm col, 1800 mm cap dia			60.00	12.00	12.250	14.000	13.125	0.980
031 142-5500	Column form,Plywood, 300 mm x 300 mm columns, 1 use	SQM CON-TACT AREA	0.125 Carpenter Foreman 4.000 Carpenters 2.000 Laborers 0.250 Equip. Operator 2.000 Power Tools 0.250 Truck Crane 35 Ton	51.00	18.00	20.360	23.000	21.680	0.884
031 142-5650	Column form,Plywood, 300 mm x 300 mm columns, 5 use			51.00	18.00	24.980	29.000	26.990	0.721
031 142-6000	Column form,Plywood, 400 mm x 400 mm columns, 1 use			51.00	18.00	20.870	24.000	22.435	0.862
031 142-6650	Column form,Plywood, 600 mm x 600 mm columns, 5 use			51.00	18.00	27.850	32.000	29.925	0.646
031 142-7000	Column form,Plywood, 900 mm x 900 mm columns, 1 use			51.00	18.00	23.040	26.000	24.520	0.781
031 142-7100	Column form,Plywood, 900 mm x 900 mm columns, 5 use			51.00	18.00	29.150	34.000	31.575	0.617
031 142-7600	Column form,Steel framed plywood, 5 use/month, 300 mm x 300 mm			51.00	18.00	33.510	39.000	36.255	0.537
031 142-7650	Column form,Steel framed plywood, 5 use/month, 400 mm x 400 mm			51.00	18.00	35.190	40.000	37.595	0.512
031 142-7700	Column form,Steel framed plywood, 5 use/month, 500 mm x 500 mm			51.00	18.00	36.070	41.000	38.535	0.498
031 142-7750	Column form,Steel framed plywood, 5 use/month, 600 mm x 600 mm			51.00	18.00	36.970	43.000	39.985	0.487
<b>031 146</b>	<b>FORMS IN PLACE, CULVERT:</b>								
031 146-0010	Form Culvert,1524 mm to 2438 mm rectangular, 1 use	SQM CON-TACT AREA	0.125 Carpenter Foreman 4.000 Carpenters 2.000 Laborers 0.250 Equip. Operator 2.000 Power Tools 0.250 Truck Crane 35 Ton	51.00	18.00	17.000	20.000	18.500	1.059
<b>031 150</b>	<b>FORMS IN PLACE, ELEVATED SLABS: STEEL JACK SUPPORTS</b>								
031 150-1000	Forms in place,Flat plate to 4.6 m high, 1 use	SQM	0.125 Carpenter Foreman 4.000 Carpenters 2.000 Laborers 0.250 Equip. Operator 2.000 Power Tools 0.250 Truck Crane 35 Ton	51.00	18.00	65.850	76.000	70.925	0.273
031 150-1150	Forms in place,Flat plate to 4.6 m high, 5 use			51.00	18.00	72.000	83.000	77.500	0.250
031 150-1600	Forms in place,Flat plate 6.2 m to 11 m high ceiling, 5 use			51.00	18.00	62.000	71.000	66.500	0.210
031 150-2150	Forms in place,Flat slab with drop panels, to 4.6 m high, 5 use			51.00	18.00	68.000	78.000	73.000	0.265
031 150-3500	Forms in place,Floor slab with 508 mm metal pans, 1 use			51.00	18.00	52.330	60.000	56.165	0.344
031 150-3650	Forms in place,Floor slab with 508 mm metal pans, 5 use/month			51.00	18.00	59.000	68.000	63.500	0.305
031 150-3760	Forms in place,Floor slab with 762 mm metal pans, 5 use/month			51.00	18.00	65.320	75.000	70.160	0.276
031 150-4000	Forms in place,Floor slab with 483 mm metal domes, 1 use			51.00	18.00	51.200	59.000	55.100	0.311
031 150-4150	Forms in place,Floor slab with 483 mm metal domes, 2 use/month			51.00	18.00	59.260	68.000	63.630	0.294
031 150-4500	Forms in place,Floor slab with 762 mm fiberglass domes, 1 use			51.00	18.00	51.200	59.000	55.100	0.352
031 150-4550	Forms in place,Floor slab with 762 mm fiberglass domes, 5 use			51.00	18.00	64.270	74.000	69.135	0.280
031 150-5000	Forms in place,Floor slab with hord blocks 5 uses forms			51.00	18.00	63.140	73.000	68.070	0.285



**DIVISION 03 : CONCRETE**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN	D. O. MAX	D. O. AVRG.	AVRG. E.H.
031 150-6500	Forms in place,Curb forms,wood,150 mm to 300 mm H, on elevated slabs,1 use	SQM CON-TACT AREA	0.125 Carpenter Foreman 4.000 Carpenters 2.000 Laborers 0.125 Equip. Operator 1.000 Power Tools 0.125 Truck Crane 35 Ton	50.00	9.00	23.400	27.000	25.200	0.385
031 150-8050	Forms in place,Perimeter deck and rail for elevated slabs, Curved	"		50.00	9.00	21.080	24.000	22.540	0.427
031 150-8750	Forms in place,Void forms,round fiber, 300 mm diameter,void (12")	LM		50.00	9.00	100.000	115.000	107.500	0.090
<b>031 154 FORMS IN PLACE, EQUIPMENT FOUNDATIONS:</b>									
031 154-0010	Forms in place, equipment foundations 1 use	SQM CON-TACT AREA	0.125 Carpenter Foreman 4.000 Carpenters 2.000 Laborers 0.125 Equip. Operator 1.000 Power Tools 0.125 Truck Crane 35 Ton	50.00	9.00	11.880	14.000	12.940	0.758
031 154-0150	Forms in place, equipment foundations 5 use	"		50.00	9.00	13.800	16.000	14.900	0.652
<b>031 158 FORMS IN PLACE, FOOTINGS:</b>									
031 158-0010	Forms in place, Footings Continuous wall, 1 use	SQM CON-TACT AREA	0.125 Carpenter Foreman 4.000 Carpenters 2.000 Laborers 0.125 Equip. Operator 1.000 Power Tools 0.125 Truck Crane 35 Ton	50.00	9.00	34.150	39.000	36.575	0.264
031 158-0150	Forms in place, Footings Continuous wall, 5 use	"		50.00	9.00	40.420	46.000	43.210	0.223
031 158-1000	Integral starter wall, to 100 mm high, 1 use	LM		50.00	9.00	155.000	178.000	166.500	0.058
031 158-1550	Keyway, 5 use, tapered wood, 50 mm x 150 mm		1 Carpenter	8.00	0.00	115.000	132.000	123.500	0.000
031 158-2050	Keyway, 5 use, tapered plastic, 50 mm x 100 mm		"	8.00	0.00	115.000	132.000	123.500	0.000
031 158-3000	Forms in place,pile cap, square or rectangular, 1 use		0.125 Carpenter Foreman 4.000 Carpenters 2.000 Laborers 0.125 Equip. Operator 1.000 Power Tools 0.125 Truck Crane 35 Ton	50.00	9.00	28.200	32.000	30.100	0.319
031 158-3150	Forms in place,pile cap, square or rectangular, 5 use			50.00	9.00	33.600	39.000	36.300	0.268
031 158-4000	Forms in place,pile cap,Triangular or hexagonal, 1 use			50.00	9.00	27.800	32.000	29.900	0.324
031 158-5000	Forms in place,spread footings, 1 use			50.00	9.00	30.330	35.000	32.665	0.297
031 158-5150	Forms in place,spread footings, 5 use			50.00	9.00	36.180	42.000	39.080	0.249
031 158-6000	Supports for dowels,plinths or templates, 600 mm x 600 mm footing	EA		50.00	9.00	27.000	31.000	29.000	0.333
031 158-6150	Supports for dowels,plinths or templates, 3650 mm x 3650 mm footing	"		50.00	9.00	18.000	21.000	19.500	0.500
<b>031 162 FORMS IN PLACE, GRADE BEAM:</b>									
031 162-0010	Forms,Grade Beam 1 use	SQM CON-TACT AREA	0.125 Carpenter Foreman 4.000 Carpenters 2.000 Laborers 0.125 Equip. Operator 1.000 Power Tools 0.125 Truck Crane 35 Ton	50.00	9.00	43.000	49.000	46.000	0.209
031 162-0150	Forms,Grade Beam 5 use	"		50.00	9.00	50.000	58.000	54.000	0.180
<b>031 166 FORMS IN PLACE, MAT FOUNDATION:</b>									
031 166-0010	Forms in place,mat foundation 1 use	SQM CON-TACT AREA	0.125 Carpenter Foreman 4.000 Carpenters 2.000 Laborers 0.125 Equip. Operator 1.000 Power Tools 0.125 Truck Crane 35 Ton	50.00	9.00	23.600	27.000	25.300	0.381
031 166-0120	Forms in place,mat foundation 5 use	"		50.00	9.00	28.300	33.000	30.650	0.318
<b>031 170 FORMS IN PLACE, SLAB ON GRADE:</b>									
031 170-1000	Bulkhead forms with keyway, 1 use, 2 piece	LM	0.125 Carpenter Foreman 4.000 Carpenters 2.000 Laborers 0.125 Equip. Operator 1.000 Power Tools 0.125 Truck Crane 35 Ton	50.00	9.00	155.000	178.000	166.500	0.058
031 170-1400	Bulkhead forms w/keyway, 1 piece expanded metal, left in place	"		50.00	9.00	475.000	546.000	510.500	0.019
031 170-2000	Curb forms, wood,150 mm to 450 mm high,on grade, 1 use	SQM CON-TACT AREA		50.00	9.00	22.700	26.000	24.350	0.396
031 170-2150	Curb forms, wood,150 mm to 450 mm high,on grade, 5 use	"		50.00	9.00	26.300	30.000	28.150	0.342
031 170-4050	Edge forms for slab blockouts, 1 use to 600 mm high	LM		50.00	9.00	62.000	71.000	66.500	0.145
031 170-6000	Trench forms in floor, 1 use	SQM CON-TACT AREA		50.00	9.00	17.500	20.000	18.750	0.514
031 170-6150	Trench forms in floor, 5 use	"		50.00	9.00	19.200	22.000	20.600	0.469
<b>031 174 FORMS IN PLACE, STAIRS:</b>									
031 174-0010	Forms in place,Stairs (Slant length x width), 1 use	SQM	0.125 Carpenter Foreman 4.000 Carpenters 2.000 Laborers 0.250 Equip. Operator 2.000 Power Tools 0.250 Truck Crane 35 Ton	51.00	18.00	6.700	8.000	7.350	2.687
031 174-0150	Forms in place,Stairs (Slant length x width), 5 use	"		51.00	18.00	9.000	10.000	9.500	2.000
<b>031 182 FORMS IN PLACE, WALLS:</b>									

**DIVISION 03 : CONCRETE**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN	D. O. MAX	D. O. AVRG.	AVRG. E.H.
031 182-0100	Box out for openings up to 1 square meter in 400 mm wall thick	EA	0.125 Carpenter Foreman 4.000 Carpenters 2.000 Laborers 0.250 Equip. Operator 2.000 Power Tools 0.250 Truck Crane 35 Ton	51.00	18.00	12.000	14.000	13.000	1.500
031 182-0600	Bulkhead forms w/keeway, 1 piece expanded metal, left in place	LM	1 Carpenter	8.00	0.00	100.000	115.000	107.500	0.000
031 182-2000	Job built plyform wall forms, to 2400 mm high, 1 use	SOM CON TACT AREA	0.125 Carpenter Foreman 4.000 Carpenters 2.000 Laborers 0.250 Equip. Operator 2.000 Power Tools 0.250 Truck Crane 35 Ton	51.00	18.00	30.450	35.000	32.725	0.591
031 182-2150	Job built plyform wall forms, to 2400 mm high, 5 use			51.00	18.00	38.200	44.000	41.100	0.471
031 182-2550	Job built plyform wall forms over 2400 mm to 4800 mm high, 5 use			51.00	18.00	31.100	36.000	33.550	0.575
031 182-2850	Job built plyform wall forms over 4800 mm high, 5 use			51.00	18.00	25.900	30.000	27.950	0.595
031 182-4000	Radial wall forms, smooth curved, 1 use			51.00	18.00	22.390	26.000	24.195	0.804
031 182-4150	Radial wall forms, smooth curved, 5 use			51.00	18.00	27.950	32.000	29.975	0.644
031 182-4450	Radial wall forms, curved, with 600 mm chords, 5 use			51.00	18.00	33.540	39.000	36.270	0.537
031 182-4600	Retaining wall forms, battered, to 2400 mm high, 1 use			51.00	18.00	24.650	28.000	26.325	0.730
031 182-4750	Retaining wall forms, battered, to 2400 mm high, 5 use			51.00	18.00	31.000	36.000	33.500	0.581
031 182-5050	Retaining wall forms, battered, over 2400 mm to 4800 mm high, 5 use			51.00	18.00	22.800	26.000	24.400	0.789
031 182-6200	Liners for forms Ribbed look, 13 mm & 19 mm deep, 5 use		1 Carpenter	8.00	0.00	68.900	78.000	73.950	0.000
031 182-6400	Liners for forms Rustic brick pattern, 5 use			8.00	0.00	66.800	77.000	71.900	0.000
031 182-6600	Liners for forms striated, random, 10 mm x 10 mm deep, 5 use			8.00	0.00	68.900	78.000	73.950	0.000
031 182-7800	Wall form, Modular prefabricated plywood, to 2400 mm high, 1 use/month		0.125 Carpenter Foreman 4.000 Carpenters 2.000 Laborers 0.250 Equip. Operator 2.000 Power Tools 0.250 Truck Crane 35 Ton	51.00	18.00	62.900	72.000	67.150	0.289
031 182-7850	Wall form, Modular prefabricated plywood, to 2400 mm high, 5 use/month			51.00	18.00	66.700	77.000	71.850	0.270
031 182-8050	Wall form, Modular prefabricated plywood, to 4800 mm high, 5 use/month		0.125 Carpenter Foreman 4.000 Carpenters 2.000 Laborers 0.250 Equip. Operator 2.000 Power Tools 0.250 Truck Crane 35 Ton	51.00	18.00	46.700	54.000	50.350	0.385
031 182-8660	Form, Pilasters, 5 use			51.00	18.00	30.350	35.000	32.675	0.593
031 182-9060	Wall form, Steel framed plywood, to 2400 mm high, 5 use/month			51.00	18.00	51.000	59.000	55.000	0.353
031 182-9260	Wall form, Steel framed plywood, over 2400 mm to 4800 mm high, 5 use/month			51.00	18.00	50.800	58.000	54.400	0.354
031 182-9460	Wall form, Steel framed plywood, over 4800 mm to 6100 mm high, 5 use/month			51.00	18.00	45.700	53.000	49.350	0.394
<b>031 186 GAS STATION FORMS:</b>									
031 186-0010	Forms, Curb fascia, with template 12 ga steel, left in place, 230 mm high	LM	1 Carpenter	8.00	0.00	12.000	14.000	13.000	0.000
031 186-2550	Island forms, 6100mm long, 230 mm high, 1500 mm wide	EA	0.125 Carpenter Foreman 4.000 Carpenters 2.000 Laborers 0.125 Equip. Operator 1.000 Power Tools 0.125 Truck Crane 35 Ton	50.00	6.00	6.000	7.000	6.500	1.500
<b>031 190 SCAFFOLDING See division 015-254</b>									
<b>031 196 SLIPFORMS:</b>									
031 192-1000	Slipforms Buildings, Average	SOM CON TACT AREA	1.00 Skilled Foreman 4.00 Skilled workers 2.00 Laborers 0.25 Equip. Operator 0.25 Truck Crane - Hauling 0.50 Hyd. Jack with Rids	58.00	6.00	78.000	90.000	84.000	0.077
<b>031 198 WATERSTOP:</b>									
031 198-0010	Waterstop, Polyvinyl chloride, ribbed 5 mm thk, 100 mm wide	LM	1 Carpenter	6.00	0.00	38.000	44.000	41.000	0.000
031 198-0500	Waterstop, Ribbed, PVC, with center bulb, 5 mm thick, 230 mm wide			6.00	0.00	32.000	37.000	34.500	0.000
031 198-0850	Waterstop, Dumbbell type, PVC, 150 mm wide, 10 mm thick			8.00	0.00	33.000	38.000	35.500	0.000
031 198-1250	Waterstop, Split PVC, 10mm thick, 150 mm wide			8.00	0.00	33.000	38.000	35.500	0.000
031 198-2050	Waterstop, Rubber, flat dumbbell, 10 mm thick, 230 mm wide			8.00	0.00	32.000	37.000	34.500	0.000
031 198-5500	Waterstop fittings, Rubber, flat, dumbbell or center bulb, 10 mm thk, flat cross or tee, 150 - 230 mm wide			8.00	0.00	25.000	29.000	27.000	0.000
031 198-6500	Waterstop fittings, Rubber, flat, dumbbell or center bulb, 10 mm thk, flat Ell 150 - 230 mm wide			8.00	0.00	30.000	35.000	32.500	0.000
031 198-7000	Waterstop fittings, Rubber, flat, dumbbell or center bulb, 10 mm thk, Vertical Tee 150 - 230 mm wide			8.00	0.00	18.000	21.000	19.500	0.000
031 198-7500	Waterstop fittings, Rubber, flat, dumbbell or center bulb, 10 mm thk, Vertical Ell 150 - 230 mm wide			8.00	0.00	27.000	31.000	29.000	0.000
<b>032 CONCRETE REINFORCEMENT</b>									
<b>032 100 REINFORCING STEEL:</b>									
<b>032 107 REINFORCING IN PLACE A615, GRADE 60:</b>									
032 107-0100	Grade 60, Reinforcement, Beams & Girders, 10 mm to 25 mm	MT TON	0.25 Labor Foreman 4.00 Steel Fixtures 2.00 Common Laborers 0.25 Equip. Operator 1.00 Power Tool 0.125 Crane 0.125 Bed Truck	52.00	10.00	1.100	1.500	1.300	8.571
032 107-0150	Grade 60, Reinforcement, Beams & Girders, 25 mm to 40 mm			40.00	12.00	1.400	2.000	1.700	8.571



**DIVISION 03 : CONCRETE**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN	D. O. MAX	D. O. AVRG.	AVRG. E.H.
032 107-0200	Grade 60,Reinforcement,Columns, 10 mm to 25 mm			40.00	12.00	1.000	1.000	1.000	12.000
032 107-0250	Grade 60,Reinforcement,Columns, 25 mm to 40 mm			40.00	12.00	1.200	1.500	1.350	10.000
032 107-0300	Grade 60,Reinforcement,Spirals, 10 mm diam, hot rolled, to 350 mm dia. )			40.00	12.00	1.200	1.500	1.350	10.000
032 107-0400	Grade 60,Reinforcement,Elevated slabs,10 mm to 25 mm			40.00	12.00	1.800	2.000	1.900	6.667
032 107-0500	Grade 60,Reinforcement,Footings 10 mm to 25 mm			40.00	12.00	1.400	2.000	1.700	6.571
032 107-0550	Grade 60,Reinforcement,Footings 25 mm to 40 mm			40.00	12.00	1.800	2.000	1.900	6.667
032 107-0600	Grade 60,Reinforcement,Slab on grade 10 mm to 25 mm			40.00	12.00	1.600	2.000	1.800	7.500
032 107-0700	Grade 60,Reinforcement,Walls 10 mm to 25 mm			40.00	12.00	1.800	2.000	1.900	6.667
032 107-0750	Grade 60,Reinforcement,Walls, 25 mm to 40 mm			40.00	12.00	2.200	3.000	2.600	5.455
032 107-1000	Grade 60,Reinforcement,Typical in place,10 metric ton lots average			40.00	12.00	1.100	1.500	1.300	10.909
032 107-1100	Grade 60,Reinforcement,Typical in place,over 45 metric ton lots,average			40.00	12.00	1.400	2.000	1.700	8.571
032 107-2000	Unloading,handling & sorting,steel reinforcement add to above	MCTON	0.25 Skilled Foreman 4.00 Steel Fixtures(Reinf.) 2.00 Laborers 0.50 Equip. Oper.(Crane) 0.50 Equip. Oper. (Ciler) 0.50 Hydr.Crane,20 ton 0.50 Bed Truck	58.00	8.00	80.000	92.000	86.000	0.100
032 107-2400	Reinforcement steel,Dowels, 600 mm long, deformed,10 mm bar	EA	0.125 Steel Foreman 2.000 Steel Fixtures 1.000 Helper	25.00	0.00	400.000	460.000	430.000	0.000
032 107-2420	Reinforcement steel,Dowels, 600 mm long, deformed,16 mm bar			25.00	0.00	300.000	345.000	322.500	0.000
032 107-2430	Reinforcement steel,Dowels, 600 mm long, deformed, 20 mm bar			25.00	0.00	270.000	311.000	290.500	0.000
032 107-2450	Reinforcement steel,Dowels,heavier and longer than 20 mm	KG		25.00	0.00	280.000	322.000	301.000	0.000
032 107-2500	Reinforcement steel,Smooth dowels, 300 mm long, 10 mm dia. (3/8")	EA		25.00	0.00	100.000	115.000	107.500	0.000
032 107-2520	Reinforcement steel,Smooth dowels, 300 mm long, 16 mm dia. (5/8")			25.00	0.00	85.000	98.000	91.500	0.000
032 107-2700	Reinforcement steel,Dowel caps, 125 mm long, 20 mm dia. (3/4")			25.00	0.00	78.000	90.000	84.000	0.000
032 107-2720	Reinforcement steel,Dowel caps, 125 mm long, 32 mm dia. (1 1/4")			25.00	0.00	700.000	805.000	752.500	0.000
<b>032 109</b>	<b>SPLICING REINFORCING BARS Incl. holding bars in place while splicing:</b>								
032 109-0130	Butt weld column bar splice including holding bars in place, 35 mm bars	EA	1.00 Skilled Foreman 4.00 Steel Fixtures(Reinf.) 2.00 Laborers 1.00 Power Tools	56.00	16.00	70.000	81.000	75.500	0.229
032 109-0310	Column splice clamps,sleeve&wedge,or end bearing 30 mm or 35 mm steel bars			56.00	16.00	120.000	138.000	129.000	0.133
032 109-0800	Mechanical but splice, sleeve type with filler metal,compression only,all grades, columns only 35 mm steel bars			56.00	16.00	55.000	63.000	59.000	0.291
032 109-1700	Splice steel bar,including mechanical threading,straight steel bars, 35 mm			56.00	16.00	60.000	69.000	64.500	0.267
032 109-1750	Splice steel bar,including mechanical threading,straight steel bars, 40 mm	EA	1.00 Skilled Foreman 4.00 Steel Fixtures(Reinf.) 2.00 Laborers 1.00 Power Tools	56.00	16.00	45.000	52.000	48.500	0.356
032 109-2500	Splice bent steel bar, including mechanical threading, bars, 40 mm			56.00	16.00	36.000	41.000	38.500	0.444
<b>032 200</b>	<b>WELDED WIRE FABRIC:</b>								
<b>032 207</b>	<b>WELDED WIRE FABRIC:</b>								
032 207-0100	Welded Wire Fabric Sheets,100 mm x100 mmx (10x10) mm,12.34 Kg/m2	SDM	0.125 Steel Foreman 4.00 Steel Fixtures 2.00 Helper	49.00	0.00	630.000	725.000	677.500	0.000
032 207-0150	Welded Wire Fabric Sheets,100 mm x 200 mm x (12x8) mm,10.90 Kg/m2			52.00	0.00	585.000	673.000	629.000	0.000
032 207-0200	Welded Wire Fabric Sheets,100 mm x 200 mm x (10x8) mm, 8.14 Kg/m2			52.00	0.00	560.000	644.000	602.000	0.000
032 207-0300	Welded Wire Fabric Sheets, 200 mm x 200 mm x (10x10) mm, 6.6 Kg/m2			52.00	0.00	535.000	615.000	575.000	0.000
032 207-0400	Welded Wire Fabric Sheets,100 mm x 100 mm x (7x7) mm, 6.04 Kg/m2			52.00	0.00	520.000	598.000	559.000	0.000
032 207-0420	Welded Wire Fabric Sheets, 150 mm x 150 mm x (8x8) mm, 5.36 Kg/m2			52.00	0.00	500.000	575.000	537.500	0.000
032 207-0425	Welded Wire Fabric Sheets,100 mm x 300 mm x (8x8) mm, 5.30 Kg/m2			52.00	0.00	495.000	569.000	532.000	0.000
032 207-0440	Welded Wire Fabric Sheets,100 mm x 400 mm x (8x5) mm, 4.34 Kg/m2			52.00	0.00	470.000	541.000	505.500	0.000
032 207-0500	Welded Wire Fabric Sheets, 200 mm x 200 mm x (8x8) mm, 3.95 Kg/m2			52.00	0.00	450.000	518.000	484.000	0.000
032 207-0600	Welded Wire Fabric Sheets,100 mm x 400 mm x (8x5) mm, 2.61 Kg/m2			52.00	0.00	425.000	489.000	457.000	0.000
032 207-0650	Welded Wire Fabric Sheets,100 mm x 400 mm x (4x4) mm, 1.98 Kg/m2			52.00	0.00	420.000	483.000	451.500	0.000
032 207-0700	Welded Wire Fabric Sheets, 200 mm x 200 mm x (5x5) mm, 1.54 Kg/m2			52.00	0.00	410.000	472.000	441.000	0.000
032 207-0800	Welded Wire Fabric Sheets,150 mm x150 mm x (4x4) mm, 1.35 Kg/m2			52.00	0.00	400.000	460.000	430.000	0.000
<b>032 300</b>	<b>STRESSING TENDONS:</b>								
<b>032 307</b>	<b>PRESTRESSING STEEL Post-tensioned in field:</b>								
032 307-0100	Stressing Tendon,Post-tensioned in field,grouted strand, 15 m span, 50 metric ton	KG	1.00 Skilled Foreman 4.00 Steel Fixtures (Reinf.) 1.00 Equip Oper (light) 2.00 Laborers 3.00 Stressing Equipment 0.50 Grouting Equipment	64.00	28.00	360.000	414.000	387.000	0.078
032 307-0150	Stressing Tendon,Post-tensioned in field, grouted strand,15 m span,150 metric ton			64.00	28.00	760.000	874.000	817.000	0.037
032 307-0300	Stressing Tendon,Post-tensioned in field,grouted strand, 30 m span,grouted 50 metric ton			64.00	28.00	550.000	633.000	591.500	0.051
032 307-1000	Stressing Tendon,Post-tensioned in field,grouted strand, 25 m span,grouted 25 metric ton			64.00	28.00	900.000	1035.000	967.500	0.031
032 307-1200	Stressing Tendon,Post-tensioned in field,ungrouted strand, 15 m span, 50 metric ton		1 Skilled Foreman 3 Steel workers 3 Stressing Equipment	32.00	24.00	350.000	403.000	376.500	0.069

**DIVISION 03 : CONCRETE**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN	D. O. MAX	D. O. AVRG.	AVRG. E.H.
032 307-1400	Stressing Tendon, Post-tensioned in field, ungrouted strand, 30 m span, ungrouted 50 metric ton			32.00	24.00	490.000	564.000	527.000	0.049
032 307-1800	Stressing Tendon, Post-tensioned in field, ungrouted bars, 15 m span, 25 metric ton			32.00	24.00	410.000	472.000	441.000	0.059
032 307-2000	Stressing Tendon, Post-tensioned in field, ungrouted bars, 25 m span, ungrouted, 25 metric ton			32.00	24.00	515.000	592.000	553.500	0.047
032 307-2220	Steel Post-tensioned in field, ungrouted single strand, 30 m slab, 10 metric ton			32.00	24.00	325.000	374.000	349.500	0.074
<b>033 CAST-IN-PLACE CONCRETE</b>									
<b>033 100 STRUCTURAL CONCRETE:</b>									
<b>033 130 CONCRETE IN PLACE: Including forms (5 use), reinforcing steel, and finishing unless otherwise indicated</b>									
033 130-0204	Cast in Place, with forms, steel & finishing, Base, granolithic, 25 mm x 127mm high, straight	LM	0.125 Laborer Formwork 2.000 Cement Finishers 1.000 Carpenter 1.000 Steel fixer 1.000 Common Laborer 2.000 Gas Finishing Mach	41.00	16.00	75.000	86.000	80.500	0.213
033 130-0220	Cast in Place, with forms, steel & finishing, Base, granolithic, 25 mm x 127mm high, cove			41.00	16.00	56.000	64.000	60.000	0.266
033 130-0300	Cast in Place, with forms, steel & finishing, Beams, 745 kg/m, 3 m span	CUM	1.000 Skilled Foreman 10.00 Carpenters & Steel Fixers (reinf.) 4.000 Laborers 0.250 Cement Finisher 1.000 Equip. Oper. 0.375 Gas Engine Vibrator 0.125 Concrete Pump & Trans Mixer 0.500 Crane 80 Ton 0.125 Truck 4.000 Power tools	130.00	41.00	5.000	6.000	5.500	8.200
033 130-0350	Cast in Place, with forms, steel & finishing, Beams, 745 kg/m, 7.6 m span			130.00	41.00	6.200	7.000	6.600	6.613
033 130-0720	Cast in place with forms, steel, Columns, square, 300 mm x 300 mm, Average reinforcing, 4.2 m high	CUM	1.000 Skilled Foreman 10.00 Carpenters & Steel Fixers (reinf.) 4.000 Laborers 0.250 Cement Finisher 1.000 Equip. Oper. 0.375 Gas Engine Vibrator 0.125 Concrete Pump & Trans Mixer 0.500 Crane 80 Ton 0.125 Truck 4.000 Power tools	130.00	41.00	2.700	3.000	2.850	15.185
033 130-0920	Cast in place with forms, steel, Columns, square, 600 mm x 600 mm, Average reinforcing, 4.2 m high			130.00	41.00	4.600	5.000	4.800	8.913
033 130-1020	Cast in place with forms, steel, Columns, square, 900 mm x 900 mm, Average reinforcing, 4.2 m high			130.00	41.00	5.900	7.000	6.450	8.949
033 130-1040	Cast in place with forms, steel, Columns, square, 300 mm x 1600 mm, Average reinforcing, 4.2 m high			130.00	41.00	4.500	5.000	4.750	9.111
033 130-1100	Cast in place including forms, steel & concrete, columns, round, tied, 300 mm diameter, Average reinforcement, 4.2 m high		1.000 Skilled Foreman 9.00 Carpenters & Steel Fixers (reinf.) 5.000 Laborers 0.250 Cement Finisher 1.000 Equip. Oper. 0.375 Gas Engine Vibrator 0.125 Concrete Pump & Trans Mixer 0.500 Crane 80 Ton 0.125 Truck 2.000 Power tools	130.00	25.00	4.000	5.000	4.500	6.250
033 130-1420	Cast in place with forms, steel, Columns, round, tied, 600 mm diameter, Average reinforcing, 4.2 m high			130.00	25.00	6.000	7.000	6.500	4.167
033 130-1520	Cast in place with forms, steel, Columns, round, tied, 900 mm diameter, Average reinforcing, 4.2 m high			130.00	25.00	8.200	9.000	8.600	3.049
033 130-1540	Cast in place with forms, steel, Columns, round, tied, 900mm diameter, Maximum reinforcing, 4.2 m high			130.00	25.00	4.800	5.000	5.400	5.208
033 130-1900	Cast in place with forms, steel & finish, Elevated flat slabs, 600 kg/m2 Sup. Load, 6 m span		1.000 Skilled Foreman 10.00 Carpenters & Steel Fixers (reinf.) 4.000 Laborers 0.250 Cement Finisher 1.000 Equip. Oper. 0.375 Gas Engine Vibrator 0.125 Concrete Pump & Trans Mixer 0.500 Crane 80 Ton 0.125 Truck 4.000 Power tools	130.00	41.00	14.700	17.000	15.850	2.789
033 130-1930	Cast in place with forms, steel & finish, Elevated flat slabs, 600 kg/m2 Sup. Load, 8.4 m span			130.00	41.00	20.000	23.000	21.500	2.050
033 130-2100	Cast in place with forms, steel & finish, Elevated flat slabs, 600 kg/m2 Sup. Load, 4.6 m span			130.00	41.00	15.000	17.000	16.000	2.733
033 130-2130	Cast in place with forms, steel & finish, Elevated flat slabs, 600 kg/m2 Sup. Load, 7.4 m span			130.00	41.00	18.000	21.000	19.500	2.278
033 130-2300	Cast in place with forms, steel & finish, Elevated Waffle slabs, 762mm domes, 600 kg/m2 Sup. Load, 6 m span		1.000 Skilled Foreman 10.00 Carpenters & Steel Fixers (reinf.) 4.000 Laborers 0.250 Cement Finisher 1.000 Equip. Oper. 0.375 Gas Engine Vibrator 0.125 Concrete Pump & Trans Mixer 0.500 Crane 80 Ton 0.125 Truck 4.000 Power tools	130.00	41.00	12.000	14.000	13.000	3.417
033 130-2350	Cast in place with forms, steel & finish, Elevated Waffle slabs, 762mm domes, 600 kg/m2 Sup. Load, 6.2 m span			130.00	41.00	15.000	17.000	16.000	2.733



**DIVISION 03 : CONCRETE**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN	D. O. MAX	D. O. AVRG.	AVRG. E.H.
033 130-2500	Cast in place with forms, steel & finish, Elevated joist slab, 762 mm pans 600 kg/m2 Sup. Load, 4.6 m span			130.00	41.00	11.800	14.000	12.900	3.475
033 130-2750	Cast in place with forms, steel & finish, Elevated joist slab, 762 mm pans 600 kg/m2 Sup. Load, 7.2 m span			130.00	41.00	14.400	17.000	15.700	2.847
033 130-2780	Cast in place with forms, steel & finish, Elevated One way beam slab, 600 kg/m2 Sup. Load, 7.6 m span			130.00	41.00	9.500	11.000	10.250	4.316
033 130-2950	Cast in place with forms, steel & finish, Elevated Two way beam slab, 600 kg/m2 Sup. Load, 7.6 m span			130.00	41.00	10.950	13.000	11.975	3.744
033 130-3200	Cast in place, Elevated slabs including finish only, not including forms or reinforcing, Regular Concrete, 150 mm slab	SQM	0.50 Skilled foreman 5.00 Laborers 2.00 Cement Finishers 2.00 Carpenters 1.00 Equip. Operator 1.00 Concrete Pump (small) 2.00 Gas engine vibrator 2.00 Gas Finishing Machine	92.00	40.00	438.000	504.000	471.000	0.091
033 130-3300	Cast in place, Lightweight concrete elevated slabs including finish only, 1750 kg/m3, 64 mm thick floor fill			92.00	40.00	438.000	504.000	471.000	0.091
033 130-3800	Cast in place including forms & steel, Spread footings, spread under, 0.75 m3	CUM	1.000 Skilled Foreman 5.000 Carpenters & Steel Fixers (reinf) 0.25 Cement Finisher 4.000 Laborers 0.250 Equip. Operators 0.375 Gas Engine Vibrator 0.25 Crane 35 Ton 0.125 Truck 0.125 Concrete Pump 2.00 Power Tool	84.00	23.00	15.000	17.000	16.000	1.533
033 130-3850	Cast in place including forms & steel, Spread footings, spread over 4 m3			84.00	23.00	18.000	21.000	19.500	1.278
033 130-4050	Cast in place, Raft ( Matt ) foundation, including forms & steel, over 1000 m3		0.50 Skilled Foreman 7.000 Carpenters & Steel Fixers (reinf) 0.250 Cement Finisher 4.000 Laborers 0.500 Equip. Operators 0.250 Gas Engine Vibrator 0.250 Crane 35 Ton 0.250 Truck 0.125 Concrete Pump 2.000 Power Tool	98.00	23.00	24.500	28.000	26.250	0.939
033 130-4050	Cast in place, Raft ( Matt ) foundation, including forms & steel, over 25 m3 & up to 500 m3			98.00	23.00	20.000	23.000	21.500	1.150
033 130-4050	Cast in place, Raft ( Matt ) foundation, including forms & steel, up to 25 m3			98.00	23.00	18.000	21.000	19.500	1.278
033 130-4200	Cast in place including forms & steel, Grade walls, 200 mm thick, 2400m m high		0.5 Skilled Foreman 10.00 Carpenters & Steel Fixers (reinf.) 5.000 Laborers 0.250 Cement Finisher 1.000 Equip. Oper 0.250 Gas Engine Vibrator 0.125 Concrete Pump & Trans Mixer 0.625 Crane 80 Ton 0.125 Truck 4.000 Power tools	134.00	41.00	8.700	10.000	9.350	4.713
033 130-4250	Cast in place including forms & steel, Grade walls, 200 mm thick, 4.2 m high			134.00	41.00	7.000	8.000	7.500	5.857
033 130-4270	Cast in place including forms & steel, Grade walls, 300 mm thick, 4.2 m high			134.00	41.00	10.000	12.000	11.000	4.100
033 130-4350	Cast in place including forms & steel, Grade walls, 400 mm thick, 3.6 m high			134.00	41.00	15.000	17.000	16.000	2.733
033 130-4500	Cast in place including forms & steel, Grade walls, 400 mm thick, 5.5 m high			134.00	41.00	10.400	12.000	11.200	3.842
033 130-4525	Cast in place including forms, steel & finish, Handicap access ramp, railing both sides, 1.50 m wide			134.00	41.00	14.500	17.000	15.750	2.828
033 130-4700	Cast in place including forms, steel and finish, Slab on grade, 150 mm thick		1.00 Skilled foreman 6.00 Carpenters & Steel Fixers (reinf.) 3.00 Laborers 3.00 Cement Finishers 0.125 Equip. Operators (med.) 0.375 Concrete Pump (small) 2.000 Power tools 0.375 Gas Engine Vibrator 3.00 Gas Finishing Machine	113.00	46.00	12.000	14.000	13.000	3.833
033 130-4760	Cast in place, Slab on grade, including troweled finish, not incl. forms or reinforcing, 100mm thick slab	SQM	0.50 Skilled foreman 1.00 Laborers 3.00 Cement Finishers 0.25 Concrete Pump (small) 0.25 Gas engine vibrator 3.00 Gas Finishing Machine	34.00	26.00	100.000	115.000	107.500	0.280
033 130-4840	Cast in place, Slab on grade, including troweled finish, not incl. forms or reinforcing, 200 mm thick slab		0.50 Skilled foreman 1.00 Laborers 3.00 Cement Finishers 0.25 Concrete Pump (small) 0.25 Gas engine vibrator 3.00 Gas Finishing Machine	34.00	26.00	88.440	102.000	95.220	0.317
033 130-4900	Cast in place, Slab on grade, including troweled finish, not incl. forms or reinforcing, 300 mm thick slab			34.00	26.00	77.660	89.000	83.330	0.361
033 130-4950	Cast in place, Slab on grade, including troweled finish, not incl. forms or reinforcing, 380 mm thick slab			34.00	26.00	70.770	81.000	75.885	0.396
033 130-5010	Cast in place, Slab on grade, incl. textured finish, not incl. forms or reinforcing, 150 mm thick slab			34.00	26.00	90.280	104.000	97.140	0.310
033 130-5650	Cast in place Lightweight concrete, ready mix 1:3:2, for roof decks, including screed finish only, not including forms or reinforcing	CUM		34.00	26.00	30.000	35.000	32.500	0.933

**DIVISION 03 : CONCRETE**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN	D. O. MAX	D. O. AVRG.	AVRG. E.H.
033 130-5700	Cast in place, Slab on grade, including troweled finish, forms and reinforcing, 100mm thick slab		1 000 Skilled foreman 6 000 Carpenters & Steel Fixtures (reinf.) 3 000 Laborers 3 000 Cement Finishers 0 125 Equip. Operator (med.) 0 375 Concrete Pump (small) 2 000 Power tools 0 375 Gas Engine Vibrator 3 000 Gas Finishing Machine	113.00	46.00	9.000	10.000	9.500	5.111
033 130-5720	Cast in place, Slab on grade, including troweled finish, forms and reinforcing, 200mm thick slab			113.00	46.00	17.200	20.000	18.600	2.674
033 130-5740	Cast in place, Slab on grade, including troweled finish, forms and reinforcing, 300mm thick slab			113.00	46.00	24.800	29.000	26.900	1.855
033 130-5760	Cast in place, Thickened Slab on grade, including troweled finish, forms and reinforcing, 380mm thick slab			113.00	46.00	30.500	35.000	32.750	1.506
033 130-5950	Cast in place concrete, Pile caps, forms and reinf., square or rectangular, over 7.5' m3	CUM	1 000 Skilled Foreman 5 000 Carpenters & Steel Fixtures (reinf.) 4 000 Laborers 0 250 Cement Finisher 0 250 Equip. Oper 0 375 Gas Engine Vibrator 0 250 Crane 80 Ton 0 125 Truck 0 125 Concrete Pump 2 000 Power tools	84.00	23.00	21.000	24.000	22.500	1.095
033 130-6050	Cast in place concrete, Pile caps, forms and reinf., Triangular or hexagonal, over 7.5 m3			84.00	23.00	20.500	24.000	22.250	1.122
033 130-8200	Cast in place concrete, Retaining walls, gravity, 1.2 m high including forms & reinforcement, tapered 200 mm top, 600 mm bottom		1 000 Skilled Foreman 9 000 Carpenters 5 000 Laborers 6 500 Cement Finisher 0 500 Equip. Oper 0 375 Gas Engine Vibrator 0 375 Concrete Pump (small) 0 500 Crane 80 Ton 4 000 Power tools	128.00	42.00	15.500	18.000	16.750	2.710
033 130-6300	Cast in place concrete, Retaining walls, cantilever, 2.4 m high including forms, footing and reinforcement, tapered 300 mm top, 600 mm bottom		0 500 Skilled Foreman 10 000 Carpenters & Steel Fixtures (reinf.) 5 000 Laborers 0 250 Cement Finisher 1 000 Equip. Oper 0 250 Gas Engine Vibrator 0 125 Concrete Pump & Trans. Mixer 0 625 Crane 80 Ton 0 125 Truck 4 000 Power tools	134.00	41.00	15.000	17.000	16.000	2.733
033 130-6800	Cast in place concrete, Stairs, free standing treads, 1.6 meter long, 300 mm wide, including forms, steel, landing 1.2 x 1.8 meters and finish		1 000 Skilled Foreman 8 000 Carpenters 0 250 Steel Fixers 0 125 Cement Finishers 0 125 Equip. Operators 4 000 Laborers 0 125 Gas Engine Vibrator 0 125 Concrete pump 0 375 Crane 80 Ton 0 125 Truck 0 125 Gas Finishing m/c 4 000 Power tools	108.00	39.00	1.110	1.500	1.305	35.135
033 130-7000	Cast in place concrete, Stairs Landing, including forms, steel & finish		1 000 Skilled Foreman 10 000 Carpenters & Steel Fixers (reinf.) 4 000 Laborers 0 250 Cement Finisher 1 000 Equip. Oper 0 375 Gas Engine Vibrator 0 125 Concrete Pump & Trans. Mixer 0 500 Crane 80 Ton 0 125 Truck 4 000 Power tools	130.00	41.00	10.700	12.000	11.350	3.832
033 138	CUTTING CONCRETE	See Div. 020-728							
033 142	DAMPPROOFING	See Div. 071							
033 146	EQUIPMENT FOR PLACING CONCRETE	See Div. 016-406							
033 148	EXPANSION JOINT	See Div. 031-132							
033 134	CURING:								
033 134-0100	Curing concrete with burlap, 4 uses assumed 940 gram	SQM	2 Common Laborers	16.00	0.00	450.000	518.000	484.000	0.000
033 134-0200	Curing concrete with waterproof curing paper, 2 ply, reinforced			16.00	0.00	575.000	661.000	618.000	0.000
033 134-0300	Curing concrete with sprayed membrane curing compound			16.00	0.00	700.000	805.000	752.500	0.000
033 156	GROUT:								
033 156-0010	Grout Column & machine bases, non-shrink metallic grout, 25 mm deep	SQM	1 Cement Finisher 1 Helper	16.00	0.00	5.500	6.000	5.750	0.000
033 134-0050	Grout Column & machine bases, non-shrink metallic grout, 50 mm deep			16.00	0.00	4.000	5.000	4.500	0.000
033 160	GUNITE OR "SHOTCRETE":								
033 160-0300	Gunité, applied in 25mm layers, typical in place, including mesh, 50 mm thick, average	SQM	0 125 Labor Foreman 4 000 Laborers 2 000 Cement Finishers 1 000 Equip. Oper (med.) 2 000 Steel Workers (reinf.) 1 000 Concrete Pump (small) 0 125 Crane 80 Ton 0 125 Truck	73.00	10.00	40.000	41.000		
033 160-0500	Gunité, applied in 25mm layers, typical in place, including mesh, 100 mm thick, average			73.00	10.00	30.000	35.000	32.500	0.333



**DIVISION 03 : CONCRETE**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN	D. O. MAX	D. O. AVRG.	AVRG. E.H.
033 160-1100	Gunite applied in 25mm layers, typical in place, including mesh, 100 mm thick, high finish, average			75.00	10.00	20.000	23.000	21.500	0.500
<b>033 168</b>	<b>PATCHING CONCRETE:</b>								
033 168-0100	Patching concrete in Floors, 6 mm thick, small areas, regular grout	SQM	1,000 Cement Finisher 1,000 Helper 1,000 Tool set	15.00	8.00	20.000	23.000	21.500	0.400
033 168-0150	Patching concrete in Floors, 6 mm thick, small areas, epoxy grout	SQM	1,000 Cement Finisher 1,000 Helper 1,000 Tool set	15.00	8.00	15.000	17.000	16.000	0.533
033 168-2150	Patching concrete in Walls, including chipping, cleaning and epoxy grout Average	"	"	15.00	8.00	6.000	7.000	6.500	1.333
<b>033 172</b>	<b>PLACING CONCRETE and vibrating, including labor &amp; eqpt.:</b>								
033 172-0050	Placing concrete, including vibrating, labor & equipment for small beams, elevated, pumped	CUM	1 Labor Foreman 9 Laborers 1 Cement Finisher 2 Carpenter 1 Equip. Operator 2 Gas Engine Vibrator 1 Concrete Pump & Trans Mixer	104.00	24.00	80.000	92.000	86.000	0.300
033 172-0100	Placing concrete, including vibrating, labor & equipment for small beams, elevated, with crane and bucket		1 Labor Foreman 5 Laborers 1 Cement Finisher 1 Carpenter 1 Equip. Oper 2 Gas Engine Vibrators 1 Concrete Bucket, 0.76m <sup>3</sup> 1 Hyd. Crane, 50 metric ton	72.00	24.00	42.000	48.000	45.000	0.571
033 172-0200	Placing concrete, including vibrating, labor & equipment for large beams, elevated, pumped		1 Labor Foreman 9 Laborers 1 Cement Finisher 2 Carpenter 1 Equip. Operator 2 Gas Engine Vibrator 1 Concrete Pump & Trans Mixer	104.00	24.00	87.000	100.000	93.500	0.276
033 172-0400	Placing concrete, including vibrating, labor & equipment for columns, square or round, 300mm thick, pumped			72.00	24.00	26.000	32.000	30.000	0.857
033 172-0450	Placing concrete, including vibrating, labor & equipment for columns, square or round, 300 mm thick, with crane and bucket		1 Labor Foreman 5 Laborers 1 Cement Finisher 1 Carpenter 1 Equip. Oper 2 Gas Engine Vibrators 1 Concrete Bucket, 0.76m <sup>3</sup> 1 Hyd. Crane, 50 metric ton	72.00	24.00	28.000	32.000	30.000	0.857
033 172-0600	Placing concrete, including vibrating, labor & equipment for columns, square or round, 600 mm thick, pumped		1 Labor Foreman 5 Laborers 1 Cement Finisher 1 Carpenter 1 Equip. Oper (med.) 2 Gas Engine Vibrators 1 Concrete Pump (small)	72.00	24.00	54.000	62.000	58.000	0.444
033 172-0650	Placing concrete, including vibrating, labor & equipment for columns, square or round, 600 mm thick, with crane and bucket		1 Labor Foreman 5 Laborers 1 Cement Finisher 1 Carpenter 1 Equip. Oper 2 Gas Engine Vibrators 1 Concrete Bucket, 0.76m <sup>3</sup> 1 Hyd. Crane, 50 metric ton	72.00	24.00	46.000	53.000	49.500	0.522
033 172-1000	Placing concrete, including vibrating, labor & equipment for columns, square or round, 900 mm thick, pumped		1 Labor Foreman 5 Laborers 1 Cement Finisher 1 Carpenter 1 Equip. Oper (med.) 2 Gas Engine Vibrators 1 Concrete Pump (small)	72.00	24.00	104.000	120.000	112.000	0.231
033 172-1050	Placing concrete, including vibrating, labor & equipment for columns, square or round, 900 mm thick, with crane and bucket		1 Labor Foreman 5 Laborers 1 Cement Finisher 1 Carpenter 1 Equip. Oper 2 Gas Engine Vibrators 1 Concrete Bucket, 0.76m <sup>3</sup> 1 Hyd. Crane, 50 metric ton	72.00	24.00	81.000	93.000	87.000	0.296
033 172-1400	Placing concrete, including vibrating, labor & equipment for elevated slabs, less than 150 mm thick, pumped		1 Labor Foreman 9 Laborers 1 Cement Finisher 2 Carpenter 1 Equip. Operator 2 Gas Engine Vibrator 1 Concrete Pump & Trans Mixer	104.00	24.00	87.000	100.000	93.500	0.276
033 172-1450	Placing concrete, including vibrating, labor & equipment for elevated slabs, less than 150 mm thick, with crane & bucket		1 Labor Foreman 5 Laborers 1 Cement Finisher 1 Carpenter 1 Equip. Oper 2 Gas Engine Vibrators 1 Concrete Bucket, 0.76m <sup>3</sup> 1 Hyd. Crane, 50 metric ton	72.00	24.00	60.000	69.000	64.500	0.400
033 172-1500	Placing concrete, including vibrating, labor & equipment for elevated slabs, 150 mm to 250 mm thick, pumped		1 Labor Foreman 9 Laborers 1 Cement Finisher 2 Carpenter 1 Equip. Operator 2 Gas Engine Vibrator 1 Concrete Pump & Trans Mixer	104.00	24.00	105.000	121.000	113.000	0.229

**DIVISION 03 : CONCRETE**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN	D. O. MAX	D. O. AVRG.	AVRG. E.H.
033 172-1650	Placing concrete,including vibrating,labor & equipment for elevated slabs over 250 mm thick, with crane & bucket	CUM	1 Labor Foreman 5 Laborers 1 Cement Finisher 1 Carpenter 1 Equip. Oper 2 Gas Engine Vibrators 1 Concrete Bucket,0.76m <sup>3</sup> 1 Hyd.Crane,50 metric ton	72.00	24.00	69,000	79,000	74,000	0.348
033 172-1900	Placing concrete,including vibrating,labor & equipment for footings, continuous,shallow,direct chute		1 Labor Foreman 5 Laborers 1 Carpenter 1 Cement Finisher 2 Gas Engine Vibrators	64.00	16.00	93,000	107,000	100,000	0.172
033 172-1950	Placing concrete,including vibrating,labor & equipment for footings, continuous,shallow,pumped		1 Labor Foreman 5 Laborers 1 Cement Finisher 1 Carpenter 1 Equip. Oper (med.) 2 Gas Engine Vibrators 1 Concrete Pump (small)	72.00	24.00	71,000	82,000	76,500	0.338
033 172-2000	Placing concrete,including vibrating,labor & equipment for footings, continuous, shallow, with crane and bucket		1 Labor Foreman 5 Laborers 1 Cement Finisher 1 Carpenter 1 Equip. Oper 2 Gas Engine Vibrators 1 Concrete Bucket,0.76m <sup>3</sup> 1 Hyd.Crane,50 metric ton	72.00	24.00	66,000	76,000	71,000	0.364
033 172-2100	Placing concrete,including vibrating,labor & equipment for footings, Deep continuous footings,direct chute		1 Labor Foreman 5 Laborers 1 Carpenter 1 Cement Finisher 2 Gas Engine Vibrators	64.00	16.00	112,000	129,000	120,500	0.143
033 172-2150	Placing concrete,including vibrating,labor & equipment for footings, Deep continuous footings,pumped		1 Labor Foreman 5 Laborers 1 Cement Finisher 1 Carpenter 1 Equip. Oper (med.) 2 Gas Engine Vibrators 1 Concrete Pump (small)	72.00	24.00	93,000	107,000	100,000	0.258
033 172-2600	Placing concrete,including vibrating,labor & equipment for spread footings,over 4 m <sup>3</sup> , direct chute		1 Labor Foreman 5 Laborers 1 Carpenter 1 Cement Finisher 2 Gas Engine Vibrators	64.00	16.00	87,000	100,000	93,500	0.184
033 172-2650	Placing concrete,including vibrating,labor & equipment for spread footings,over 4 m <sup>3</sup> , pumped		1 Labor Foreman 5 Laborers 1 Cement Finisher 1 Carpenter 1 Equip. Oper (med.) 2 Gas Engine Vibrators 1 Concrete Pump (small)	72.00	24.00	85,000	98,000	91,500	0.282
033 172-2700	Placing concrete,including vibrating,labor & equipment for spread footings,over 4 m <sup>3</sup> , with crane and bucket		1 Labor Foreman 5 Laborers 1 Cement Finisher 1 Carpenter 1 Equip. Oper 2 Gas Engine Vibrators 1 Concrete Bucket,0.76m <sup>3</sup> 1 Hyd.Crane,50 metric ton	72.00	24.00	70,000	81,000	75,500	0.343
033 172-2950	Placing concrete,including vibrating,labor & equipment for foundation mats, over 1000 m <sup>3</sup> , pumped		1 Labor Foreman 5 Laborers 1 Cement Finisher 1 Carpenter 1 Equip. Oper (med.) 2 Gas Engine Vibrators 1 Concrete Pump (small)	72.00	24.00	233,000	268,000	250,500	0.103
033 172-3000	Placing concrete,including vibrating,labor & equipment for foundation mats, over 1000 m <sup>3</sup> , with crane and bucket		1 Labor Foreman 5 Laborers 1 Cement Finisher 1 Carpenter 1 Equip. Oper 2 Gas Engine Vibrators 1 Concrete Bucket,0.76m <sup>3</sup> 1 Hyd.Crane,50 metric ton	72.00	24.00	100,000	115,000	107,500	0.240
033 172-3200	Placing concrete,including vibrating,labor & equipment for grade,beams,direct chute		1 Labor Foreman 5 Laborers 1 Carpenter 1 Cement Finisher 2 Gas Engine Vibrators	64.00	16.00	112,000	129,000	120,500	0.143
033 172-3250	Placing concrete,including vibrating,labor & equipment for grade,beams,pumped		1 Labor Foreman 5 Laborers 1 Cement Finisher 1 Carpenter 1 Equip. Oper (med.) 2 Gas Engine Vibrators 1 Concrete Pump (small)	72.00	24.00	105,000	121,000	113,000	0.229
033 172-3300	Placing concrete,including vibrating,labor & equipment for grade, beams, with crane and bucket		1 Labor Foreman 5 Laborers 1 Cement Finisher 1 Carpenter 1 Equip. Oper 2 Gas Engine Vibrators 1 Concrete Bucket,0.76m <sup>3</sup> 1 Hyd.Crane,50 metric ton	72.00	24.00	100,000	115,000	107,500	0.240
033 172-3500	Placing concrete,including vibrating,labor & equipment for high rise, more than 5 stories & up to 15 stories, pumped, adds/story	CUM	1 Labor Foreman 5 Laborers 1 Cement Finisher 1 Carpenter 1 Equip. Oper 2 Gas Engine Vibrators 1 Concrete Bucket,0.76m <sup>3</sup> 1 Hyd.Crane,50 metric ton						0.000
033 172-3510	Placing concrete,including vibrating,labor & equipment for high rise, more than 5 stories, with crane and bucket adds/story								0.000
033 172-3520	Placing concrete,including vibrating,labor & equipment for high rise, more than 15 stories, pumped, adds/story								0.040



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033 172-3510	Placing concrete,including vibrating,labor & equipment for high rise, more than 15 stories, with crane and bucket adds/story		↓						0.040
033 172-4000	Placing concrete,including vibrating,labor & equipment for pile cap,over 8m3 direct chute		1 Labor Foreman 5 Laborers 1 Carpenter 1 Cement Finisher 2 Gas Engine Vibrators	64.00	16.00	140.000	161.000	150.500	0.114
033 172-4050	Placing concrete,including vibrating,labor & equipment for pile cap,over 8m3 pumped		1 Labor foreman 5 Laborers 1 Cement Finisher 1 Carpenter 1 Equip Oper (med.) 2 Gas Engine Vibrators 1 Concrete Pump (small)	72.00	24.00	116.000	133.000	124.500	0.207
033 172-4100	Placing concrete,including vibrating,labor & equipment for pile cap,over 8m3 with crane and bucket		1 Labor Foreman 5 Laborers 1 Cement Finisher 1 Carpenter 1 Equip. Oper 2 Gas Engine Vibrators 1 Concrete Bucket 0.76m3 1 Hyd Crane 50 metric ton	72.00	24.00	100.000	115.000	107.500	0.240
033 172-4600	Placing concrete,including vibrating,labor & equipment for slab over 150 mm thick, direct chute		1 Labor Foreman 5 Laborers 1 Carpenter 1 Cement Finisher 2 Gas Engine Vibrators	64.00	16.00	116.000	133.000	124.500	0.138
033 172-4650	Placing concrete,including vibrating,labor & equipment for slab over 150 mm thick, pumped		1 Labor foreman 5 Laborers 1 Cement Finisher 1 Carpenter 1 Equip Oper (med.) 2 Gas Engine Vibrators 1 Concrete Pump (small)	72.00	24.00	116.000	133.000	124.500	0.207
033 172-4700	Placing concrete,including vibrating,labor & equipment for slab over 150 mm thick, with crane and bucket		1 Labor Foreman 5 Laborers 1 Cement Finisher 1 Carpenter 1 Equip. Oper 2 Gas Engine Vibrators 1 Concrete Bucket 0.76m3 1 Hyd Crane 50 metric ton	72.00	24.00	100.000	115.000	107.500	0.240
033 172-4900	Placing concrete,including vibrating,labor & equipment for walls, 200 mm thick, direct chute		1 Labor Foreman 5 Laborers 1 Carpenter 1 Cement Finisher 2 Gas Engine Vibrators	64.00	16.00	70.000	81.000	75.500	0.229
033 172-4950	Placing concrete,including vibrating,labor & equipment for walls, 200 mm thick, pumped		1 Labor foreman 5 Laborers 1 Cement Finisher 1 Carpenter 1 Equip Oper (med.) 2 Gas Engine Vibrators 1 Concrete Pump (small)	72.00	24.00	76.000	87.000	81.500	0.316
033 172-5000	Placing concrete,including vibrating,labor & equipment for walls, 200 mm thick, with crane and bucket		1 Labor Foreman 5 Laborers 1 Cement Finisher 1 Carpenter 1 Equip. Oper 2 Gas Engine Vibrators 1 Concrete Bucket 0.76m3 1 Hyd Crane 50 metric ton	72.00	24.00	86.000	76.000	71.000	0.364
033 172-5100	Placing concrete,including vibrating,labor & equipment for walls, 300 mm thick, pumped		1 Labor foreman 5 Laborers 1 Cement Finisher 1 Carpenter 1 Equip Oper (med.) 2 Gas Engine Vibrators 1 Concrete Pump (small)	72.00	24.00	77.000	89.000	83.000	0.312
033 172-5400	Placing concrete,including vibrating,labor & equipment for walls, 400 mm thick,with crane and bucket		1 Labor Foreman 5 Laborers 1 Cement Finisher 1 Carpenter 1 Equip. Oper 2 Gas Engine Vibrators 1 Concrete Bucket 0.76m3 1 Hyd Crane 50 metric ton	72.00	24.00	60.000	69.000	64.500	0.400
033 172-5810	Add to above concrete placing items and as required for concrete dumping using wheeled riding carts, 45 meter haul		0.125 Labor Foreman 1.00 Laborers 1.00 Concrete Wheeled Carts	9.00	8.00	40.000	46.000	43.000	0.200
<b>033 180</b>	<b>SAWING CONCRETE</b>	<i>See division 020-728</i>							
<b>033 184</b>	<b>STAIR TREAD INSERTS:</b>								
033 184-0010	Stair tread inserts, cast iron,abrasive, 75 mm wide	LM	1 Carpenter	8.00	0.00	20.000	23.000	21.500	0.000
033 184-0550	Stair tread inserts,cast iron,extruded aluminum safety tread,100 mm wide	LM	1 Carpenter	8.00	0.00	18.000	21.000	19.500	0.000
033 184-1750	Stair tread,cement filled pan type,non-slip	SQM	1 Cement Finisher	8.00	0.00	7.000	8.000	7.500	0.000
<b>033 192</b>	<b>WATERPROOFING AND DAMPPROOFING</b>	<i>See division 071</i>							
<b>033 450</b>	<b>CONCRETE FINISHING:</b>								
<b>033 454</b>	<b>FINISHING FLOORS:</b>								
033 454-0010	Finishing concrete floors monolithic,screed finish	SQM	1 Cement Finisher	8.00	0.00	70.000	81.000	75.500	0.000
033 454-0100	Finishing concrete floors,float finish		0.125 Labor Foreman 1 Cement Finisher 1 Gas Finishing Mach	9.00	8.00	55.000	63.000	59.000	0.145
033 454-0150	Finishing concrete floors,Broom finish			8.00	8.00	50.000	58.000	54.000	0.160
033 454-0200	Finishing concrete floors,Steel trowel finish,for resilient tile			9.00	8.00	45.000	52.000	48.500	0.178
033 454-0250	Finishing concrete floors monolithic,Steel trowel finish		↓	9.00	8.00	36.000	41.000	38.500	0.222
033 454-0600	Concrete,Integral topping and finish, using 1:1.2 mix, 25mm thick		0.125 Labor Foreman 1 Laborer 2 Cement Finishers 2 Gas Finishing Mach	25.00	16.00	55.000	63.000	59.000	0.291

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033 454-0950	Concrete, Granolithic topping, laid after 1:1:1-1/2 mix, 50 mm thick			25.00	16.00	40.000	46.000	43.000	0.400
033 454-1200	Concrete, Granolithic topping Heavy duty 1:1/2, 20 mm thick, prestressed, gray, over 2000 m2			25.00	16.00	25.000	29.000	27.000	0.640
033 454-1350	Concrete, Granolithic topping, for colors, 2.44 kg/m2, add. Average			25.00	16.00	115.000	132.000	123.500	0.139
033 454-1600	Concrete, Exposed local aggregate finish, Average		1 Cement Finisher	8.00	0.00	45.000	52.000	48.500	0.000
033 454-2000	Concrete, Floor hardeners, metallic, light service, 2.44 kg/m2		0.25 Labor Foreman 1 Cement Finisher 1 Gas Finishing Mach	10.00	8.00	68.000	78.000	73.000	0.118
033 454-2050	Concrete, Floor hardeners, metallic, Medium service, 3.66 kg/m2			10.00	8.00	60.000	69.000	64.500	0.133
033 454-2100	Concrete, Floor hardeners, metallic, Heavy service, 4.88 kg/m2			10.00	8.00	52.000	60.000	56.000	0.154
033 454-2150	Concrete, Floor hardeners, metallic, Extra Heavy service, 7.32 kg/m2	SQM	0.25 Labor Foreman 1 Cement Finisher 1 Gas Finishing Mach	10.00	8.00	45.000	52.000	48.500	0.178
033 454-2300	Concrete, Floor hardeners, Non-metallic light service, 2.44 kg/m2			10.00	8.00	68.000	78.000	73.000	0.118
033 454-2450	Concrete, Floor hardeners, Non-metallic, Extra Heavy, 7.32 kg/m2			10.00	8.00	45.000	52.000	48.500	0.178
033 454-2600	Concrete, Floor colored hardener, metallic, medium service 3.66 kg/m2			10.00	8.00	35.000	40.000	37.500	0.229
033 454-2650	Concrete, Floor colored hardener, non-metallic, medium service 3.66 kg/m2			10.00	8.00	45.000	52.000	48.500	0.178
033 454-3850	Concrete floor, Dustproofing, silicate liquids, 2 coats		1 Cement Finisher	8.00	0.00	100.000	115.000	107.500	0.000
033 454-4000	Concrete floor, Dustproofing, Epoxy coating, 1 coat, clear			8.00	0.00	115.000	132.000	123.500	0.000
033 454-4050	Concrete floor, Dustproofing, Epoxy coating, 1 coat, Colors			8.00	0.00	115.000	132.000	123.500	0.000
033 454-4400	Concrete Stair finish, float			8.00	0.00	20.000	23.000	21.500	0.000
033 454-4500	Concrete Stair finish, Steel trowel finish			8.00	0.00	15.000	17.000	16.000	0.000
033 454-4600	Concrete Stair finish, Silicon carbide finish, 1.22 kg/m2			8.00	0.00	10.000	11.000	10.500	0.000
<b>033 458 FINISHING WALLS:</b>									
033 458-0050	Finishing Concrete Walls, Burlap rub with grout	SQM	1 Cement Finisher 1 Helper	16.00	0.00	56.000	64.000	60.000	0.000
033 458-0100	Finishing Concrete Walls, Carbonium rub, dry			16.00	0.00	28.000	32.000	30.000	0.000
033 458-0300	Finishing Concrete Walls, Bush hammer, green concrete		0.25 Labor Foreman 4 Laborers 1 Equipment Oper (light) 1 Air Compressor 116 US Wt Accessories & Hoses	42.00	6.00	75.000	86.000	80.500	0.107
033 458-0600	Finishing Concrete Walls, Float finish, 2 mm thick		1 Cement Finisher	8.00	0.00	22.000	25.000	23.500	0.000
033 458-0700	Finishing Concrete Walls, Sandblast, light penetration		0.25 Foreman 1.00 Laborer 2.00 Cement Finishers 2.00 Gas Finishing Mach	26.00	16.00	85.000	98.000	91.500	0.188
033 458-0750	Finishing Concrete Walls, Sandblast, Heavy penetration			24.00	16.00	28.000	32.000	30.000	0.571
<b>034 PRECAST CONCRETE</b>									
<b>034 100 STRUCTURAL PRECAST:</b>									
<b>034 104 BEAMS:</b>									
034 104-0011	Precast concrete beams, "L" shaped, 6.0m span, 300 mm x 500 mm and within 25 meter reaching distance	EA	1 Struct Steel Foreman 6 Struct Steel Workers 2 Common Laborer 1 Equip Oper (Crane) 1 Equip Oper Dier 1 Truck Crane 136 metric ton 4 Hydraulic Jacks 4 Tools Set	88.00	72.00	25.000	29.000	27.000	2.880
034 104-1050	Precast concrete beams, "L" shaped, Larger size span beams, up to 10 ton units and within 25 meters reaching distance	LM		88.00	72.00	100.000	115.000	107.500	0.720
034 104-1100	Precast concrete beams, "L" shaped, Larger size span beams, up to 15 ton and within 45 meters reaching distance			88.00	72.00	45.000	52.000	48.500	1.600
<b>034 112 COLUMNS:</b>									
034 112-0010	Precast concrete columns Rectangular to 3.7 m floor high, small columns, 1 floor, up to 3 ton units and within 30 meters reaching distance	LM	1 Struct Steel Foreman 6 Struct Steel Workers 2 Common Laborer 1 Equip Oper (Crane) 1 Equip Oper Dier 1 Truck Crane 136 metric ton 4 Hydraulic Jacks 4 Tools Set	88.00	72.00	74.000	85.000	79.500	0.973
034 112-0050	Precast concrete columns Rectangular to 3.7 m floor high, large columns, 1 floor, up to 10 ton units and within 30 meters reaching distance			88.00	72.00	45.000	52.000	48.500	1.600
034 112-0300	Precast concrete columns Rectangular to 7.2 m floor high, large columns 1 floor, up to 5 ton units and within 30 meters reaching distance			88.00	72.00	85.000	98.000	91.500	0.847
034 112-1000	Precast concrete columns Rectangular to 3.7 m floor high, large columns 1 floor, up to 10 ton units and within 45 meters reaching distance			88.00	72.00	30.000	35.000	32.500	2.400
034 112-1200	Precast concrete columns Rectangular to 3.7 m floor high, large columns 1 floor, up to 10 ton units and within 60 meters reaching distance			88.00	72.00	24.000	28.000	26.000	3.000
<b>034 124 CURBS ROADWAY TYPE</b>	<b>See Div. 025-250</b>								
<b>034 128 JOISTS:</b>									
034 128-0010	Precast Concrete Joists, 195 KG/M2 L.L., 150 mm deep for 3.6 m spans, low rise 8 floors building	EA	1 Skilled Foreman 3 Skilled Workers 1 Laborer 1 Equip Oper (Crane) 1 Hyd Crane 11 metric ton	48.00	8.00	42.000	48.000	45.000	0.190
034 128-0050	Precast Concrete Joists, 195 KG/M2 L.L., 200 mm deep for 4.8 m spans, low rise 8 floors building			48.00	8.00	31.000	36.000	33.500	0.260
034 128-0100	Precast Concrete Joists, 195 KG/M2 L.L., 250 mm deep for 6 m spans, low rise 8 floors building			48.00	8.00	24.000	28.000	26.000	0.313
034 128-0150	Precast Concrete Joists, 195 KG/M2 L.L., 300 mm deep for 7.2 m spans, low rise 8 floors building			48.00	8.00	20.000	23.000	21.500	0.400
034 128-0500	Precast Concrete Joists, 195 KG/M2 L.L., 150 mm deep for 3.6 m spans, 2 floor building, labor handling & installation, 50 meter handling distance		1 Skilled Foreman 3 Skilled Workers 6 Common Laborers	80.00	0.00	19.750	23.000	21.375	0.000



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034 128-0550	Precast Concrete Joists, 195 KG/M <sup>2</sup> L.L., 200 mm deep for 4.6 m spans, 2 floor building, labor handling & installation, 50 meter handling distance.			80.00	0.00	14,800	17,000	15,900	0.000
034 128-0600	Precast Concrete Joists, 195 KG/M <sup>2</sup> L.L., 150 mm deep for 7.2 m spans, 2 floor building, labor handling & installation, 50 meter handling distance.			80.00	0.00	10,000	12,000	11,000	0.000
<b>034 136</b>	<b>SLABS:</b>								
034 136-0010	Precast roof slabs, Prestressed hollowcore or plank, 195 Kg/m <sup>2</sup> LL, 200 mm deep, Straight jobs without difficulties.	SQM	1 Struct Steel Foreman 6 Struct Steel Workers 2 Common Laborer 1 Equip Oper (Crane) 1 Equip Oper (Ciler) 1 Truck Crane, 136 metric ton 4 Hydraulic Jacks 4 Tools Set	88.00	72.00	500,000	690,000	645,000	0.120
034 136-0010	Precast roof slabs, Prestressed hollowcore or plank, 195 Kg/m <sup>2</sup> LL, 200 mm deep, Jobs with difficulties.			88.00	72.00	320,000	368,000	344,000	0.225
034 136-0200	Precast floor slabs, Prestressed hollowcore or plank, 490 Kg/m <sup>2</sup> LL, 250 mm deep			88.00	72.00	520,000	598,000	559,000	0.138
<b>034 140</b>	<b>TEES:</b>								
034 140-0200	Precast prestressed concrete, Double tee, 3 m wide, floor members, 18m span up to 0.8 m deep & up to 390 Kg/m <sup>2</sup> LL	SQM	1 Struct Steel Foreman 6 Struct Steel Workers 2 Common Laborer 1 Equip Oper (Crane) 1 Equip Oper (Ciler) 1 Truck Crane, 136 metric ton 4 Hydraulic Jacks 4 Tools Set	88.00	72.00	648,000	745,000	696,500	0.111
034 140-0350	Precast prestressed concrete, Double tee, 3 m wide, roof members, 15 m span, up to 0.3 m deep			88.00	72.00	540,000	621,000	580,500	0.133
034 140-1250	Precast Concrete, Double tees, floor members standard weight, 0.3 m deep, 2.4 m wide, 6 m span			88.00	72.00	288,000	331,000	309,500	0.250
034 140-1450	Precast Concrete, Double tees, floor members standard weight, 0.6 m deep, 2.4 m wide, 15 m span			88.00	72.00	468,000	536,000	503,000	0.154
034 140-2050	Precast Concrete, Double tees, roof members light weight, 500 mm x 2400 mm wide 12 m span			88.00	72.00	488,000	562,000	525,500	0.147
034 140-2150	Precast Concrete, Double tees, roof members, light weight, 0.8 m deep, 3.0 m wide 18 m span			88.00	72.00	702,000	807,000	754,500	0.103
034 140-2250	Precast Concrete, Double tees, roof members standard weight, 0.4 m deep, 2.4 m wide 9 m span			88.00	72.00	368,000	423,000	395,500	0.196
034 140-2350	Precast Concrete, Double tees, roof members standard weight, 500 mm x 2400 mm wide 12 m span			88.00	72.00	432,000	497,000	464,500	0.167
<b>034 500</b>	<b>ARCHITECTURAL PRECAST:</b>								
<b>034 504</b>	<b>WALL PANELS:</b>								
034 504-0150	Precast Concrete, Wall panel, uninsulated, smooth gray, low rise, size: 1.2 m x 2.4 m, 100 mm thick, up to 1 ton and within 20 meters reaching distance.	SQM	1 Struct Steel Foreman 6 Struct Steel Workers 2 Common Laborer 1 Equip Oper (Crane) 1 Equip Oper (Ciler) 1 Truck Crane, 136 metric ton 4 Hydraulic Jacks 4 Tools Set	88.00	8.00	53,000	61,000	57,000	0.151
034 504-0200	Precast Concrete, Wall panel, uninsulated, smooth gray, low rise, size: 2.4 m x 2.4 m, 100 mm thick, up to 2 tons and within 20 meters reaching distance.	SQM	1 Struct Steel Foreman 6 Struct Steel Workers 2 Common Laborer 1 Equip Oper (Crane) 1 Equip Oper (Ciler) 1 Truck Crane, 136 metric ton 4 Hydraulic Jacks 4 Tools Set	88.00	8.00	67,000	77,000	72,000	0.119
034 504-0250	Precast Concrete, Wall panel, uninsulated, smooth gray, low rise, size: 2.4 m x 4.6 m, 100 mm thick, up to 3 tons and within 20 meters reaching distance.	SQM	1 Struct Steel Foreman 6 Struct Steel Workers 2 Common Laborer 1 Equip Oper (Crane) 1 Equip Oper (Ciler) 1 Truck Crane, 136 metric ton 4 Hydraulic Jacks 4 Tools Set	88.00	8.00	109,000	125,000	117,000	0.073
034 504-0400	Precast Concrete, Wall panel, uninsulated, smooth gray, low rise, size: 2.4 m x 2.4 m, 200 mm thick, up to 2.5 tons and within 20 meters reaching distance.			88.00	8.00	59,000	68,000	63,500	0.136
034 504-0500	Precast Concrete, Wall panel, uninsulated, exposed aggregate, low rise, size: 2.4 m x 2.4 m, 150 mm thick, up to 2 tons and within 20 meters reaching distance.			88.00	8.00	67,000	77,000	72,000	0.119
034 504-0520	Precast Concrete, Wall panel, uninsulated, exposed aggregate, low rise, size: 2.4 m x 2.4 m, 200 mm thick, up to 3 tons and within 20 meters reaching distance.			88.00	8.00	69,000	68,000	63,500	0.136
034 504-0580	Precast Concrete, Wall panel, insulated, textured, 10 floors high rise, size: 1.6 m x 2.4 m, 200 mm thick, up to 2.5 ton and 20 meters reaching distance.			88.00	8.00	35,000	40,000	37,500	0.229
034 504-0600	Precast Concrete, Wall panel, insulated, textured, 10 floors high rise, size: 1.6 m x 3.2 m, 200 mm thick, up to 3 ton and 20 meters reaching distance.			88.00	8.00	53,000	61,000	57,000	0.151
034 504-0700	Precast Concrete, Wall panel, insulated, textured, 10 floors high rise, size: 2.4 m x 4.8 m, 200 mm thick, up to 5 ton and 20 meters reaching distance.			88.00	8.00	65,000	75,000	70,000	0.123
034 504-0700	Precast Concrete, Wall panel, insulated, textured, 10 floors high rise, size: 2.4 m x 4.8 m, 200 mm thick, up to 5 ton and 20 meters reaching distance.			88.00	8.00	65,000	75,000	70,000	0.123
<b>034 800</b>	<b>PRECAST SPECIALTIES:</b>								
<b>034 802</b>	<b>LINTELS:</b>								
034 802-0800	Lintel, Precast concrete, 100 mm x 200 mm, to 1500 mm long, low rise	LM	0.25 Labor Foreman 1 Bricklayer 1 Bricklayer Helper	18.00	0.00	60,000	69,000	64,500	0.000
034 802-0850	Lintel, Precast concrete, 100 mm x 200 mm, to 3.6 m long, 5 to 10 floors		0.25 Labour Foreman 1 Bricklayer 2 Bricklayer Helpers 1 Equip Oper 1 Crane	34.00	8.00	55,000	63,000	59,000	0.145
034 802-1250	Lintel, Precast concrete, 200 mm wide, 200 mm height, to 3.6 m long, over 10 floors			34.00	8.00	42,000	48,000	45,000	0.190
034 802-1400	Lintel, Precast concrete, 250 mm wide, 200 mm height, to 4.3 m long, low rise			34.00	8.00	65,000	75,000	70,000	0.123
034 802-1450	Lintel, Precast concrete, 300 mm wide, 200 mm height, to 5.8 m long, 5 to 10 floors			34.00	8.00	70,000	81,000	75,500	0.114

**DIVISION 03 : CONCRETE**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN	D. O. MAX	D. O. AVRG.	AVRG. E.H.
<b>035</b>	<b>CEMENTITIOUS DECKS</b>								
<b>035 200</b>	<b>LIGHTWEIGHT CONCRETE:</b>								
<b>035 204</b>	<b>CONCRETE CHANNEL SLABS:</b>								
035 204-0010	Concrete channel slabs 70 mm or 90 mm thick, straight	SQM	0.5 Labor Foreman 3 Carpenters 1 Laborer 1 Equip. Oper (crane) 1 Hyd. Crane 11 metric ton	44.00	8.00	120,000	138,000	129,000	0.067
035 204-0050	Concrete channel slabs 70 mm or 90 mm thick, chopped up			44.00	8.00	65,000	75,000	70,000	0.129
035 204-0300	Concrete channel slabs 200 mm thick, span to 7 m			44.00	8.00	85,000	98,000	91,500	0.094
<b>035 208</b>	<b>CONCRETE PLANK</b>								
035 208-0010	Concrete plank lightweight, available, T&G, 50 mm thick	SQM	0.5 Labor Foreman 3 Carpenters 1 Laborer 1 Equip. Oper (crane) 1 Hyd. Crane 11 metric ton	44.00	8.00	170,000	196,000	183,000	0.047
035 208-0100	Concrete plank lightweight, available, T&G, 95 mm thick			44.00	8.00	136,000	156,000	146,000	0.059
<b>035 212</b>	<b>INSULATING:</b>								
035 212-0010	Roof Insulating, lightweight cellular concrete roof fill Portland cement and foaming agent	CUM	0.5 Labor Foreman 5 Laborers 2 Cement Finishers 1 Equip. Oper (mix) 1 Concrete Pump (small)	52.00	8.00	28,000	32,000	30,000	0.286
035 212-0200	Roof Insulating Poured vermiculite or perlite, field mix, 1:6 roof fill, add formboards above, 50 mm thick			52.00	8.00	25,000	29,000	27,000	0.320
035 212-0250	Roof Insulating, Ready mix, 1:6 mix, roof fill, 75 mm thick			52.00	8.00	595,000	684,000	639,500	0.013
<b>035 300</b>	<b>WOOD FIBER SYSTEMS</b>								
<b>035 304</b>	<b>FORMBOARD:</b>								
035 304-0070	Formboard, including sub-purlins non-asbestos, fiber cement, 6 mm thick	SQM	0.5 Labor foreman 1 Struc. Steel Worker 1 Welder 1 Carpenter 1 Gas Welding Machine	28.00	8.00	215,000	247,000	231,000	0.037
035 304-0100	Formboard, including sub-purlins non-asbestos, fiberglass, 25 mm thick			28.00	8.00	205,000	236,000	220,500	0.039
<b>035 306</b>	<b>WOOD FIBER:</b>								
035 306-0010	Lightweight cement wood fiber, T&G planks, 25 mm thick	SQM	2 Carpenters	16.00	0.00	100,000	115,000	107,500	0.000
035 306-0011	Lightweight cement wood fiber, T&G planks, 65 mm thick			16.00	0.00	90,000	104,000	97,000	0.000



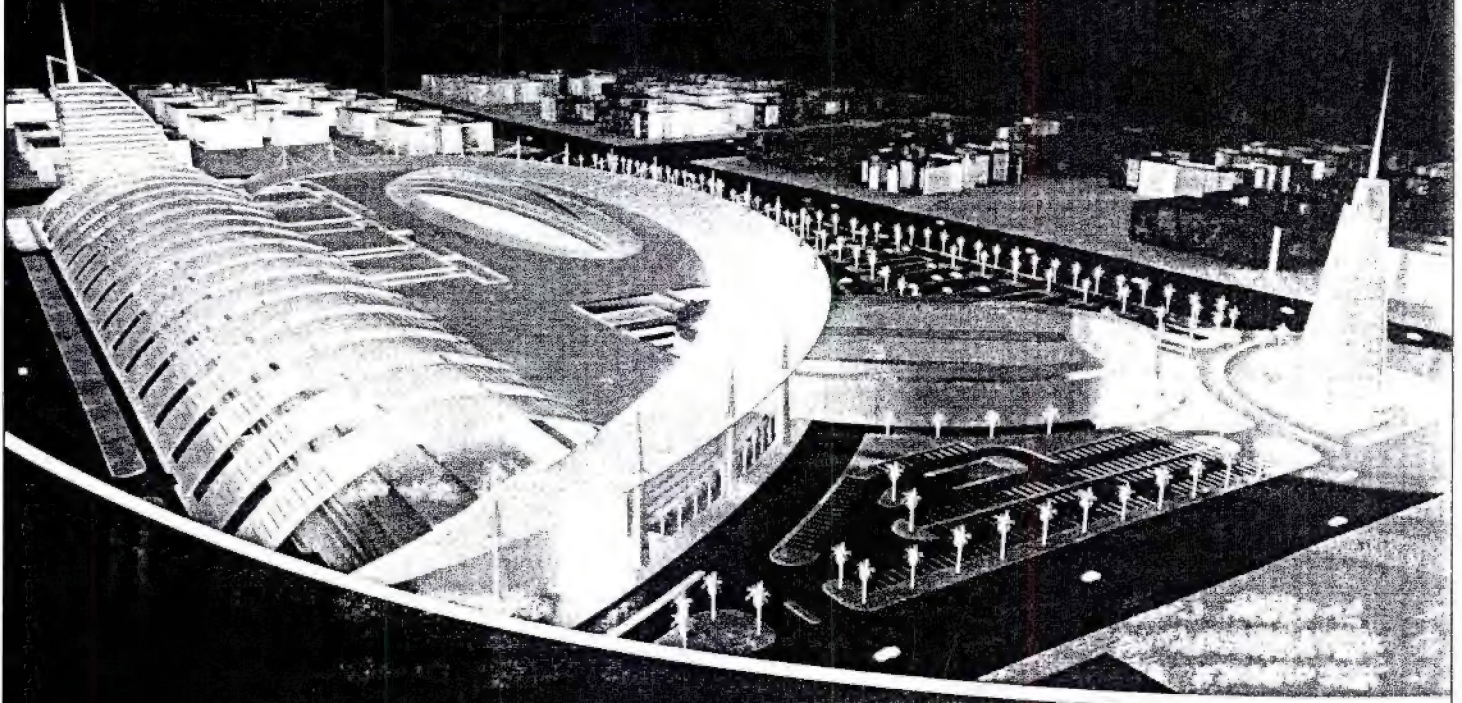
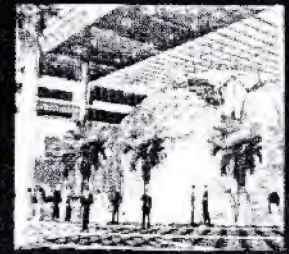
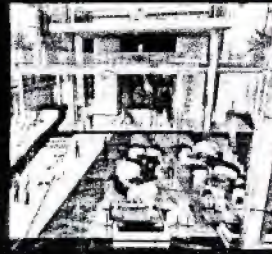
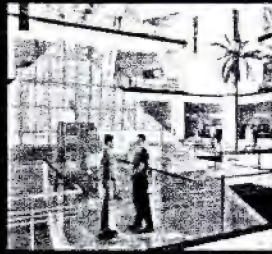
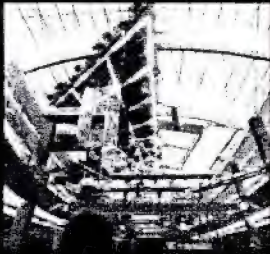
A decorative geometric pattern, resembling a complex tessellation of stars and polygons, is located in the top right corner of the page. The pattern is rendered in a light gray color against a darker gray background. The overall shape of the patterned area is a large triangle pointing towards the top right corner.

# Division 4

## Masonry



بناء



شركة بناء القواعد للتطوير العقاري  
BENAA AL KAWAED

Tel.: + 966 1 4622433 هاتف: + ٩٦٦ ١ ٤٦٢٢٤٣٣

Tel.: + 966 1 4664540 هاتف: + ٩٦٦ ١ ٤٦٦٤٥٤٠

Fax: + 966 1 4652539 فاكس: + ٩٦٦ ١ ٤٦٥٢٥٣٩

Web site: www.benaaalkawaed.com الموقع الإلكتروني

E-mail: info@benaaalkawaed.com بريد إلكتروني

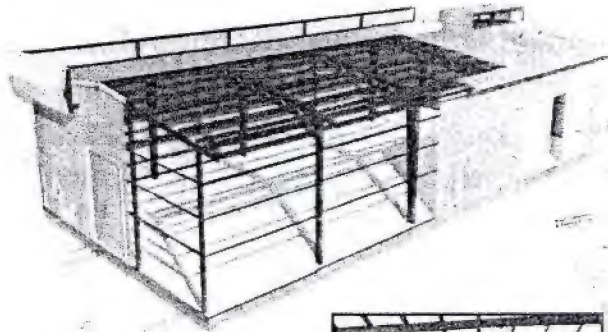


Period Contracting Est.



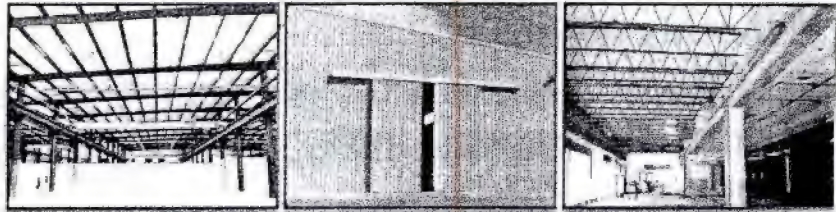
مؤسسة الحقبة للمقاولات

إعداد بناء المصانع والصناعات الحديدية



- 1- Concrete Constructions .
- 2- Factory Building.
- 3- Warehouse Building.

الرياض - الميز - هاتف ٢٩٢٠٦٨١ / ٢٩٢٠٦٧١  
فاكس ٤٧٦٢٤٧٤ - ص.ب. ٥٢٦٥٠ الرياض ١١٧٥٣  
Riyadh - Malaz - Tel.: 2920181 / 2920171  
Fax : 4762474 - P.O.Box 52650 Riyadh 11753  
E-mail pce\_cont@hotmail.com



Certified Builder



بناء معتمد

Alsaad Contracting & Trading Co.

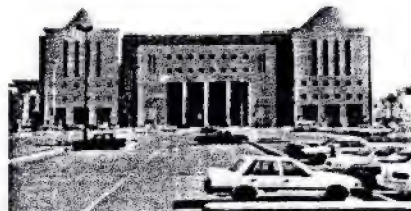


شركة السعد للمقاولات والتجارة

Head Office : P.O. Box 13028, Jeddah 21493, Saudi Arabia  
Tel : (02) 683-0306 Fax : (02) 683-2951  
E-mail : saadjeddah@alsaad.com.sa

الإدارة العامة : ص.ب. ١٣٠٢٨ جدة ٢١٤٩٣ المملكة العربية السعودية  
هاتف ٠٢-٦٨٣٠٣٠٦ فاكس ٠٢-٦٨٣٢٩٥١  
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Established in 1983, and has successfully completed large projects for the public and private sectors Kingdom wide



تأسست في عام ١٩٨٣م وأنجزت بنجاح كبرى المشاريع الإنشائية في القطاعين العام والخاص على مستوى المملكة

CLASSIFIED FIRST CLASS GENERAL CONTRACTOR

مصنفة درجة أولى مقاولون عامون

## Division 4.. Masonry..

### Estimating Tips:

#### 041 Mortar & Masonry Accessories:

The terms mortar and grout are often used interchangeably, and incorrectly. Mortar is used to bed masonry units, seal the entry of air and moisture, provide architectural appearance, and allow for size variations in the units. Grout is used primarily in reinforced masonry construction and is used to bond the masonry to the reinforcing steel. Estimator should be aware of their unique uses and costs.

#### 042 Unit Masonry:

Masonry pricing requires full knowledge of the various factors and parameters affecting costs, such as building shape, type of building, kind of mortar, wall thickness, joints style and quality of workmanship.

The most common types of unit masonry are brick and concrete masonry. The major classifications of brick are building brick and glazed brick, fire brick and pavers. Brick and concrete block are priced by the piece and then converted into price per square meter of wall.

All masonry walls, whether interior or exterior, require bracing. The cost of bracing walls during construction should be included by the estimator and this bracing must remain in place until permanent bracing is complete. Estimator shall also pay attention to all anchoring accessories of walls to the structural frames.

Brick bonds, patterns, running bonds type are major factors affecting productivity and cost. For jobs that require large amount of cutting bricks, consider a portable masonry saw.

Contractor shall pay attention to the costs of cleaning face bricks, this cost varies with the kind of bricks used. Contractor shall focus on other miscellaneous masonry costs such as extra labor and hoisting for materials used in high-rise buildings. Contractors shall focus on pricing extra materials, labor involved to meet seismic requirements for concrete masonry walls.

الرفع

المحتم

المرحلة

بمخالي

كل سبيل

التثبيت

مستوع



**DIVISION 04 : MASONRY**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN	D. O. MAX	D. O. AVRG	AVRG. E.H.
<b>041</b>	<b>MORTAR &amp; MASONRY ACCESSORIES</b>								
<b>041 100</b>	<b>MORTAR</b>								
<b>041 016</b>	<b>GROUTING:</b>								
041 016-0020	Grouting bond beams & Lintels, pumped,not incl,block 200 mm thick, 200 mm deep	CUM	1 Bricklayer 2 Bricklayer Helpers 1 Equip. Oper.(light) 1 Grout Pump complete w/ Hoses, Hopper& Accessories	32.00	8.00	8.000	9.000	8.500	1.000
041 016-0050	Grouting bond beams & Lintels, pumped,not incl,block 255 mm thick, 200 mm deep			32.00	8.00	8.200	9.000	8.600	0.976
041 016-0060	Grouting bond beams & Lintels,pumped,not incl,block 300 mm thick, 200 mm deep	SDM		32.00	8.00	8.815	10.000	9.408	0.908
041 016-0200	Grouting concrete block cores,solid,100 mm thick,by hand		1 Bricklayer 1 Bricklayer Helpers	16.00	0.00	18.000	21.000	19.500	0.000
041 016-0210	Grouting concrete block cores,solid, 150 mm thick,pumped,		1 Bricklayer 2 Bricklayer Helpers 1 Equip. Oper.(light) 1 Grout Pump complete w/ Hoses, Hopper& Accessories	32.00	24.00	112.000	128.000	120.500	0.214
041 016-0250	Grouting concrete block cores, 200 mm thick,pumped			32.00	24.00	82.000	94.000	88.000	0.293
041 016-0350	Grouting concrete block cores, 305 mm thick,pumped			32.00	24.00	48.000	55.000	51.500	0.500
041 016-0500	Grouting cavity walls, 50 mm space,pumped			32.00	24.00	164.000	189.000	176.500	0.146
041 016-0550	Grouting cavity walls, 75 mm space,pumped			32.00	24.00	109.000	125.000	117.000	0.220
041 016-0600	Grouting cavity walls,102 mm space			32.00	24.00	82.000	94.000	88.000	0.293
041 016-0700	Grouting cavity walls,150 mm space			32.00	24.00	55.000	63.000	59.000	0.436
041 016-0800	Grouting door frames, 915 mm x 2135 mm opening	OPENING		32.00	24.00	59.000	66.000	63.500	0.407
041 016-0850	Grouting door frames,1.8 m x 2.1 m opening			32.00	24.00	41.000	47.000	44.000	0.585
<b>041 024</b>	<b>MORTAR:</b>								
041 024-0100	Mortar with masonry cement, mix type M, 1:1.6 mix, field mix.	CUM	0.125 foreman 1.000 Bricklayer 2.000 Common Laborer 1.000 Mixer 0.25 m3	25.00	8.00	4.800	5.000	5.400	1.667
041 024-0200	Mortar with masonry cement, mix type N, 1:3 mix, field mix.			25.00	8.00	4.800	5.000	5.400	1.667
041 024-2100	Mortar with portland cement and lime, mix type M, 1 1/4:3 mix, field mix			25.00	8.00	4.800	5.000	5.400	1.667
041 024-2200	Mortar with portland cement and lime, mix type N, 1:1.6 mix, 5170 Kpa, field mix			25.00	8.00	4.800	5.000	5.400	1.667
041 024-2800	Mortar for glass block			25.00	8.00	4.800	5.000	5.400	1.667
<b>041 036</b>	<b>SURFACE BONDING:</b>								
041 036-0020	Surface Bonding Block walls with fiberglass mortar, gray or white color, not incl. block work	SDM	1 Bricklayer	8.00	0.00	30.000	35.000	32.500	0.000
<b>041 500</b>	<b>MASONRY ACCESSORIES</b>								
<b>041 504</b>	<b>ANCHOR BOLTS:</b>								
041 504-0010	Anchor bolts hooked w/nut and washer, 12 mm dia., 200 mm long	EA	1 Bricklayer	8.00	0.00	100.000	115.000	107.500	0.000
041 504-0030	Anchor bolts hooked w/nut and washer, 12 mm dia., 300 mm long			8.00	0.00	90.000	104.000	97.000	0.000
041 504-0050	Anchor bolts hooked w/nut and washer,16 mm dia., 300 mm long			8.00	0.00	80.000	92.000	86.000	0.000
041 504-0070	Anchor bolts hooked w/nut and washer, 20 mm dia., 300 mm long			8.00	0.00	70.000	81.000	75.500	0.000
<b>041 508</b>	<b>CONTROL JOINT:</b>								
041 508-0010	Control joint Rubber or PVC, 100 mm. wall	LM	1 Bricklayer	8.00	0.00	180.000	184.000	172.000	0.000
041 508-0100	Control joint rubber or PVC, 150 mm wall only			8.00	0.00	130.000	150.000	140.000	0.000
041 508-0140	Control joint rubber or PVC, 200 mm and wider wall			8.00	0.00	100.000	115.000	107.500	0.000
041 508-0180	Control joint rubber or PVC, 300 mm wall			8.00	0.00	75.000	86.000	80.500	0.000
<b>041 512</b>	<b>JOINT REINFORCING:</b>								
041 512-0010	Joint Reinforcing steel bars, placed horiz. 10 mm bars	KG	1 Bricklayer 1 Helper	16.00	0.00	275.000	316.000	295.500	0.000
041 512-0020	Joint Reinforcing steel bars, placed horiz. 16 mm. & 20 mm bars			16.00	0.00	440.000	506.000	473.000	0.000
041 512-0050	Joint Reinforcing steel bars, Placed vertical, 10mm bars			16.00	0.00	220.000	253.000	236.500	0.000
041 512-0060	Joint Reinforcing steel bars, Placed vertical,16 mm. & 20 mm bars			16.00	0.00	350.000	403.000	376.500	0.000
041 512-0200	Joint Reinforcing Wire strips, regular truss, to 150 mm wide, galvanized	LM		16.00	0.00	1100.000	1265.000	1182.500	0.000
041 512-0250	Joint Reinforcing Wire strips, regular truss, to 300 mm wide, galvanized			16.00	0.00	750.000	863.000	806.500	0.000
041 512-0400	Joint Reinforcing, Cavity truss with drip section to 150 mm wide			16.00	0.00	1100.000	1265.000	1182.500	0.000
041 512-0450	Joint Reinforcing, Cavity truss with drip section to 300 mm wide			16.00	0.00	750.000	863.000	806.500	0.000
<b>041 518</b>	<b>WALL PLUGS:</b>								
041 518-0010	Wall Plugs, for nailing to brickwork, 26 ga., galvanized,plain,or wood fill	100 PCS	1 Bricklayer	8.00	0.00	8.000	9.000	8.500	0.000
<b>041 520</b>	<b>WALL TIES:</b>								
041 520-0010	Wall Ties, to brick veneer, galv., corrugated, 20 mm x 180 mm, 22 ga	100 PCS	1 Bricklayer	8.00	0.00	8.000	9.000	8.500	0.000
041 520-0800	Wall Ties, Cavity wall, 150 or 200 mm long, Z type, galvanized, 6 mm,or 5mm	100 PCS	1 Bricklayer	8.00	0.00	8.000	9.000	8.500	0.000
041 520-1500	Wall Tiles, Rigid partition anchors, plain, 200 mm long and upto 50 mm x 3 mm or 50 mm x 6 mm			8.00	0.00	8.000	9.000	8.500	0.000
<b>041 524</b>	<b>VENT BOX:</b>								



# **DIVISION 04 : MASONRY**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN	D. O. MAX	D. O. AVRG	AVRG. E.H.
041 524-0010	Vent Box, Extruded aluminum, 100 mm deep, 60 mm x 206 mm	EA	1 Bricklayer 1 Helper	8.00	0.00	36.000	41.000	38.500	0.000
041 524-0050	Vent Box, Extruded aluminum, 100 mm deep, 127 mm x 206 mm or 57 mm x 635 mm			8.00	0.00	30.000	35.000	32.500	0.000
041 524-0150	Vent Box, Extruded aluminum, 100 mm deep, 127 mm x 420 mm or 127 mm x 420 mm			8.00	0.00	25.000	29.000	27.000	0.000
041 524-0200	Vent Box, Extruded aluminum, 100 mm deep, 150 mm x 420 mm			8.00	0.00	24.000	28.000	26.000	0.000
041 524-0250	Vent Box, Extruded aluminum, 100 mm deep, 197 mm x 420 mm			8.00	0.00	23.000	26.000	24.500	0.000
041 524-1050	Ventilator vent box, stainless steel, 200 mm x 200 mm			8.00	0.00	28.000	32.000	30.000	0.000
041 524-1100	Ventilator vent box, stainless steel, 300 mm x 300 mm			8.00	0.00	26.000	30.000	28.000	0.000
041 524-1150	Ventilator vent box, stainless steel, 300 mm x 150 mm			8.00	0.00	28.000	32.000	30.000	0.000
<b>042</b>	<b>UNIT MASONRY</b>								
<b>042 050</b>	<b>CHIMNEYS:</b>								
<b>042 054</b>	<b>CHIMNEY</b> Chimney for foundation, add to prices below, see div. 0330500								
042 054-0100	Chimney size 410 x 420 mm, flue size 210 x 220 mm, brick size 200 x 71 x 100 mm complete w/ mortar	LM	0.250 Foreman 0.250 Equip. Operator 3.000 Bricklayer 2.000 Helpers 0.125 Mixer 0.28 m3 2.000 Power Tool 1.000 Hods carrier	44.00	25.00	15.350	21.000	19.680	1.362
042 054-0200	Chimney size 410 x 740 mm, 2 flue lines each 210 x 220 mm, brick size 200 x 71 x 100 mm complete w/ mortar			44.00	25.00	11.180	13.000	12.095	2.234
042 054-0300	Chimney size 520 x 740 mm, 2 flue lines each 220 x 320 mm, brick size 200 x 71 x 100 mm complete w/ mortar			44.00	25.00	11.000	13.000	12.000	2.273
042 054-0350	Chimney size 520 x 840 mm, 2 flue lines each 320 x 320 mm, brick size 200 x 71 x 100 mm complete w/ mortar			44.00	25.00	10.740	12.000	11.370	2.328
042 054-1800	Chimney, Metal, high temp. steel jacket, factory lining, 610 mm dia. 24"		0.50 Struct. Steel Foreman 4.00 Struct. Steel Workers 2.00 Common Laborers 1.00 Equip. Oper. (crane) 1.00 Crane, 36 metric ton	60.00	8.00	13.500	16.000	14.750	0.593
042 054-1900	Chimney, Metal, high temp. steel jacket, factory lining, 1.5 m dia. 60"			60.00	8.00	6.750	8.000	7.375	1.185
<b>042 100</b>	<b>BRICK MASONRY</b>								
<b>042 104</b>	<b>CAULKING:</b> See division 079-204								
<b>042 108</b>	<b>COLUMNS:</b>								
042 108-0400	Columns Brick, 480 mm x 480 mm, brick size 240 x 71 x 115 mm, joints 10 mm including mortar	LM	0.250 Foreman 0.250 Equip. Operator 3.000 Bricklayer 2.000 Helpers 0.125 Mixer 0.28 m3 2.000 Power Tool 1.000 Hods carrier	44.00	25.00	11.540	13.000	12.270	2.166
042 108-0800	Columns Brick, 740 mm x 740 mm, brick size 240 x 71 x 115 mm, joints 10 mm including mortar			44.00	25.00	11.030	13.000	12.015	2.267
042 108-1000	Columns Brick, 1000 mm x 1000 mm, brick size 240 x 71 x 115 mm, joints 10 mm including mortar			44.00	25.00	10.540	12.000	11.270	2.372
<b>042 116</b>	<b>COPING:</b>								
042 116-0010	Coping for 300 mm wall, aluminum	LM	1 Bricklayer 1 Bricklayer Helper	16.00	0.00	24.000	26.000	26.000	0.000
042 116-0050	Coping for 200 mm wall, precast conc. 255 mm wide, 100 mm tapers to 90 mm		2 Bricklayer 1 Bricklayer Helper	16.00	0.00	24.000	28.000	26.000	0.000
042 116-0110	Coping for 355 mm wall, precast conc. 355 mm wide, 100 mm tapers to 90 mm		1 Bricklayer 1 Bricklayer Helper	16.00	0.00	22.000	25.000	23.500	0.000
042 116-0250	Coping wall Corner, precast corner unit	EA		16.00	0.00	32.000	37.000	34.500	0.000
042 116-0300	Coping limestone for 300 mm wall, 100 mm thick	LM		16.00	0.00	20.000	23.000	21.500	0.000
042 116-0350	Coping limestone for 300 mm wall, 150 mm thick			16.00	0.00	17.000	20.000	18.500	0.000
042 116-0500	Coping Marble to 100 mm thick wall, 230 mm wide			16.00	0.00	20.000	23.000	21.500	0.000
<b>042 130</b>	<b>FLASHING</b> See division 076-204								
<b>042 134</b>	<b>LINTELS</b> See division 051-232								
<b>042 142</b>	<b>REINFORCING</b> See division 041 -512								
<b>042 150</b>	<b>SAND BLAST:</b>								
042 150-0080	Sand Blast Building face, wet system, Average	SOM	0.25 Foreman 1.00 Equip. Operator 4.00 Laborers 1.00 Air Comp., 0.12m3/min with Air Tools Accessories Hoses	42.00	8.00	60.000	69.000	64.500	0.133
042 150-2000	Sand Blast Building face, dry system, Average	SOM		42.00	8.00	136.000	156.000	146.000	0.059
<b>042 154</b>	<b>SAWING:</b>								
042 154-0010	Sawing brick or block by hand, per 10 mm of brick depth	LM	1 Bricklayer 1 Helper	8.00	8.00	18.000	21.000	19.500	1.111
<b>042 162</b>	<b>SIMULATED BRICK</b>								
042 162-0010	Simulated brick, aluminum, baked on colors	SOM	1 Bricklayer 1 Helper	16.00	0.00	24.000	28.000	26.000	0.000
042 162-0050	Simulated brick, fiberglass panels			16.00	0.00	24.000	28.000	26.000	0.000
042 162-0110	Simulated brick, urethane pieces cemented in mastic			16.00	0.00	20.000	23.000	21.500	0.000
042 162-0180	Simulated brick, stone face, including mastic			16.00	0.00	20.000	23.000	21.500	0.000



**DIVISION 04 : MASONRY**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN	D. O. MAX	D. O. AVR	AVRG. E.H.
<b>042 166</b>	<b>STEAM CLEAN:</b>								
042 166-0300	Steam Clean building, not including scaffolding, common face brick, average	SQM	0.25 Foreman 1.00 Equip. Operator/light 4.00 Laborers 1.00 Air Compr. 0.12m3/s with Air Tools, Accessories Hoses	42.00	8.00	140.000	161.000	150.500	0.057
042 166-0400	Steam Clean building, not including scaffolding, wire cut face brick, average			32.00	8.00	88.000	101.000	94.500	0.091
<b>042 184</b>	<b>WALLS:</b>								
042 184-0800	Walls brick, common 100 mm x 71 mm x 200 mm, 100 mm wall, as face brick	SQM	0.250 Foreman 0.250 Equip. Operator 3.000 Bricklayer 2.000 Helpers 0.125 Mixer 0.28 m3 2.000 Power Tool 1.000 Hodcamer	44.00	25.00	11.096	13.000	12.048	2.253
042 184-0850	Walls brick, common, 100 mm x 71 mm x 200 mm bricks, 100 mm thick, as back up wall			44.00	13.00	11.030	13.000	12.015	1.179
042 184-0900	Walls brick, common, 100 mm x 68 mm x 200 mm bricks, 200 mm thick, as back up wall			44.00	25.00	10.610	12.000	11.305	2.356
042 184-1000	Walls brick, common, 100 mm x 71 mm x 200 mm bricks, 300 mm thick, as back up wall			44.00	25.00	10.450	12.000	11.225	2.392
042 184-1050	Walls brick, common, 100 mm x 71 mm x 200 mm bricks, 400 mm thick, as back up wall		0.250 Foreman 0.250 Equip. Operator 3.000 Bricklayer 2.000 Helpers 0.250 Mixer 0.28 m3 2.000 Power Tool 1.000 Hodcamer	44.00	26.00	9.920	11.000	10.460	2.621
<b>042 190</b>	<b>WALL TIES</b>	See division 041 -520							
<b>042 192</b>	<b>WALL PLUGS</b>	See division 041 -518							
<b>042 194</b>	<b>WINDOW SILL:</b>								
042 194-0010	Windows Sill Bluestone, thermal top, 255 mm wide, 40 mm thick	SQM	1.00 Bricklayer 1.00 Brick layer helpers	16.00	0.00	4.824	6.000	5.412	0.000
042 194-0050	Windows Sill Bluestone, thermal top, 255 mm wide, 50 mm thick			16.00	0.00	4.338	5.000	4.669	0.000
042 194-0100	Windows Sill Cut stone, 125 mm x 200 mm plain	LM		16.00	0.00	20.000	23.000	21.500	0.000
042 194-0200	Windows Sill Face brick on edge, brick, 200 mm wide			16.00	0.00	30.000	35.000	32.500	0.000
042 194-0400	Windows Sill Marble, 230 mm wide, 25 mm thick			16.00	0.00	20.000	23.000	21.500	0.000
042 194-0600	Windows Sill precast conc., 230 mm wide, 100 mm tapers to 75 mm, 200 mm wall			16.00	0.00	28.000	32.000	30.000	0.000
042 194-0650	Windows Sill precast conc., 255 mm wall, 280 wide			16.00	0.00	22.000	25.000	23.500	0.000
042 194-0700	Windows Sill precast conc., 300 mm wall, 330 mm W, 90 mm tapers to 65 mm			16.00	0.00	21.000	24.000	22.500	0.000
<b>042 200</b>	<b>CONCRETE UNIT MASONRY</b>								
<b>042 216</b>	<b>CONCRETE BLOCK, BACK-UP: Including Scaffolding</b>								
042 216-0010	Concrete Block, Back-up, Reinforced, alternate courses, bar spacing 1.2 meter, 200 mm x 400 mm, 100 mm thick	SQM	0.250 Foreman 4.000 Bricklayers 2.000 Bricklayer Helpers 0.250 Equip. Operator 0.125 Mixer 0.28 m3 0.500 Power Tools 0.250 Crane 0.125 Fork Lift 0.125 Truck 0.500 Hodcamer	52.00	13.00	38.120	44.000	41.060	0.341
042 216-1100	Concrete Block, Back-up, Reinforced, alternate courses, bar spacing 1.2 meter, 200 mm x 400 mm, 150 mm thick			52.00	13.00	33.750	39.000	36.375	0.385
042 216-1150	Concrete Block, Back-up, Reinforced, alternate courses, bar spacing 1.2 meter, 200 mm x 400 mm, 200 mm thick			52.00	13.00	28.490	33.000	30.745	0.456
042 216-1200	Concrete Block, Back-up, Reinforced, alternate courses, 200 mm x 400 mm, 250 mm thick			52.00	15.00	25.460	29.000	27.230	0.589
042 216-1250	Concrete Block, Back-up, Reinforced, alternate courses, 200 mm x 400 mm, 300 mm thick			52.00	15.00	21.870	25.000	23.435	0.686
042 216-2000	Concrete Block, Back-up, Reinforced, alternate courses, 200 mm x 400 mm, 100 mm thick, Exposed with 2 side tooled joints			52.00	13.00	36.310	42.000	39.155	0.358
042 216-2100	Concrete Block, Back-up, Reinforced, alternate courses, 200 mm x 400 mm, 150 mm thick, Exposed with 1 side tooled joints			52.00	13.00	32.150	37.000	34.575	0.404
042 216-2200	Concrete Block, Back-up, Reinforced, alternate courses, 200 mm x 400 mm, 200 mm thick, Exposed with 1 side tooled joints			52.00	13.00	27.130	31.000	29.065	0.479
042 216-2300	Concrete Block, Back-up, Reinforced, alternate courses, 200 mm x 400 mm, 300 mm thick, Exposed with 1 side tooled joints	SQM	0.250 Foreman 4.000 Bricklayers 2.000 Bricklayer Helpers 0.250 Equip. Operator 0.250 Mixer 0.28 m3 0.500 Power Tools 0.250 Crane 0.250 Fork Lift 0.125 Truck 0.500 Hodcamer	52.00	15.00	20.220	23.000	21.610	0.742
<b>042 220</b>	<b>CONCRETE BLOCK, DECORATIVE:</b>								

# **DIVISION 04 : MASONRY**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN	D. O. MAX	D. O. AVR	AVRG. E.H.
042 220-0100	Concrete Block, embossed simulated brick face, 1 Face tooled joint not reinforced, 200 mm x 400 mm units, 100 mm thick	SQM	0.250 Foreman 4.000 Bricklayers 2.000 Bricklayer Helpers 0.250 Equip. Operator 0.125 Mixer 0.28 m3 0.500 Power Tools 0.250 Crane 0.125 Fork Lift 0.125 Truck 0.500 Hoistcamer	52.00	13.00	41.670	48.000	44.935	0.510
042 220-0250	Concrete Block, embossed simulated brick face, 1 Face tooled joint, not reinforced, 200 mm x 400 mm units, 150 mm thick			52.00	13.00	37.720	43.000	40.360	0.345
042 220-0500	Concrete Block, embossed simulated brick face, 1 Face tooled joint, not reinforced, 200 mm x 400 mm units, 200 mm thick			52.00	13.00	35.932	41.000	38.466	0.362
042 220-1450	Concrete Block, Decorative, Deep grooved, smooth face, 200 mm x 400mm x 100 mm thick			52.00	13.00	34.020	39.000	36.510	0.382
042 220-1500	Concrete Block, Decorative, Deep grooved, smooth face, 200 mm x 400 mm x 200 mm thick			52.00	13.00	25.930	30.000	27.965	0.501
042 220-5100	Concrete block, decorative, split rib profile units, 25 mm deep ribs, 8 ribs, 200 mm x 400 mm x 100 mm thick			52.00	13.00	34.020	39.000	36.510	0.382
042 220-5150	Concrete block, decorative, split rib profile units, 25 mm deep ribs, 8 ribs, 200 mm x 400 mm x 150 mm thick			52.00	13.00	29.400	34.000	31.700	0.442
042 220-5200	Concrete block, decorative, split rib profile units, 25 mm deep ribs, 8 ribs, 200 mm x 400 mm x 200 mm thick			52.00	13.00	25.930	30.000	27.965	0.501
042 220-6100	Concrete block, decorative, split face or scored split face, 200 mm x 400 mm x 100 mm thick			52.00	13.00	34.020	39.000	36.510	0.382
042 220-6150	Concrete block, decorative, split face or scored split face, 200 mm x 400 mm x 150 mm thick			52.00	13.00	29.400	34.000	31.700	0.442
042 220-6200	Concrete block, decorative, split face or scored split face, 200 mm x 400 mm x 200 mm thick			52.00	13.00	25.930	30.000	27.965	0.501
042 224	<b>CONCRETE BLOCK, INTERLOCKING:</b>								
042 224-0400	Concrete block interlocking, 200 mm x 400 mm units, 200 mm thick, including grout and reinforcing	SQM	0.250 Foreman 4.000 Bricklayers 2.000 Bricklayer Helpers 0.250 Equip. Operator 0.250 Mixer 0.28 m3 0.500 Power Tools 0.250 Crane 0.125 Fork Lift 0.125 Truck 0.500 Hoistcamer	52.00	15.00	27.530	32.000	29.765	0.545
042 224-0450	Concrete block interlocking, 200 mm x 400 mm units, 300 mm thick, including grout and reinforcing			52.00	15.00	19.300	22.000	20.650	0.777
042 232	<b>CONCRETE BLOCK, PARTITIONS: Including Scaffolding</b>								
042 232-0200	Acoustical slotted concrete block, noise reduction coefficient, 0.5 or 0.65, 100 mm thick	SQM	0.250 Foreman 4.000 Bricklayers 2.000 Bricklayer Helpers 0.250 Equip. Operator 0.250 Mixer 0.28 m3 0.500 Power Tools 0.125 Crane 0.125 Fork Lift 0.125 Truck 0.500 Hoistcamer	52.00	13.00	26.690	31.000	28.845	0.487
042 232-0250	Acoustical slotted concrete block, noise reduction coefficient, 0.50 or 0.65, 150 mm thick			52.00	13.00	23.630	27.000	25.315	0.550
042 232-0400	Acoustical slotted concrete block, noise reduction coefficient, 0.45 or 0.55, 200 mm thick			52.00	13.00	19.940	23.000	21.470	0.652
042 232-0500	Acoustical slotted concrete block, noise reduction coefficient, 0.60 or 0.65, 200 mm thick			52.00	13.00	19.940	23.000	21.470	0.652
042 232-2900	Lightweight concrete block, tooled joints, solid, not reinforced, 200 mm x 400 mm x 100 mm thick			52.00	13.00	49.470	57.000	53.235	0.263
042 232-2950	Lightweight block, tooled joints, 2 side solid, not reinforced, 200 mm x 400 mm x 150 mm thick			52.00	13.00	44.470	51.000	47.735	0.282
042 232-3000	Lightweight concrete block, tooled joints, solid, not reinforced, 200 mm x 400 mm x 200 mm thick			52.00	13.00	37.250	43.000	40.125	0.349
042 232-3050	Lightweight concrete block, tooled joints, solid, not reinforced, 200 mm x 400 mm x 250 mm thick			52.00	13.00	33.450	38.000	35.725	0.389
042 232-4100	Regular concrete block, tooled joints, 2 sides, hollow not reinforced, 200 mm x 400 mm x 100 mm thick			52.00	13.00	40.050	46.000	43.025	0.325
042 232-4150	Regular concrete block, tooled joints, 2 sides, hollow not reinforced, 200 mm x 400 mm x 150 mm thick			52.00	13.00	35.460	41.000	38.230	0.367
042 232-4200	Regular block, tooled joints, 2 sides, hollow not reinforced, 200 mm x 400 mm x 200 mm thick	SQM	0.250 Foreman 4.000 Bricklayers 2.000 Bricklayer Helpers 0.250 Equip. Operator 0.250 Mixer 0.28 m3 0.500 Power Tools 0.125 Crane 0.125 Fork Lift 0.125 Truck 0.500 Hoistcamer	52.00	13.00	29.930	34.000	31.965	0.434
042 232-4250	Regular block, tooled joints, 2 sides, hollow not reinforced, 200 mm x 400 mm x 250 mm thick			52.00	13.00	26.750	31.000	28.875	0.486
042 232-4300	Regular block, tooled joints, 2 sides, hollow not reinforced, 200 mm x 400 mm x 300 mm thick			52.00	13.00	22.970	26.000	24.465	0.566
042 232-4500	Regular block, no tooled joints, hollow, non-reinforced, 200 mm x 400 mm x 100 mm thick			52.00	13.00	44.320	51.000	47.660	0.293
042 232-4550	Regular block, no tooled joints, hollow, non-reinforced, 200 mm x 400 mm x 150 mm thick			52.00	13.00	39.240	45.000	42.120	0.331



CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN	D. O. MAX	D. O. AVRG	AVRG. E.H.
042 232-4600	Regular block, no tooled joints, hollow, non-reinforced, 200 mm x 400 mm x 200 mm thick			52.00	13.00	33.120	38.000	35.560	0.393
042 232-4650	Regular block, no tooled joints, hollow, non-reinforced, 200 mm x 400 mm x 250 mm thick			52.00	13.00	29.600	34.000	31.800	0.439
042 232-5050	Regular concrete block, solid, not reinforced, 200 mm x 400 mm x 100 mm thick			52.00	13.00	42.100	48.000	45.050	0.309
042 232-5100	Regular concrete block, solid, not reinforced, 200 mm x 400 mm x 150 mm thick			52.00	13.00	37.280	43.000	40.140	0.349
042 232-5150	Regular concrete block, solid, not reinforced, 200 mm x 400 mm x 200 mm thick			52.00	13.00	31.470	36.000	33.735	0.413
042 232-5200	Regular concrete block, solid, not reinforced, 200 mm x 400 mm x 300 mm thick			52.00	13.00	24.150	28.000	26.075	0.538
042 232-5500	Regular concrete block, solid, reinforced, 200 mm x 400 mm x 100 mm thick			52.00	13.00	36.220	42.000	39.110	0.359
042 232-5550	Regular concrete block, solid, reinforced, 200 mm x 400 mm x 150 mm thick			52.00	13.00	32.060	37.000	34.530	0.405
042 232-5600	Regular concrete block, solid, reinforced, 200 mm x 400 mm x 200 mm thick			52.00	13.00	27.070	31.000	29.035	0.480
042 240	CONCRETE SCREEN BLOCK: Including Scaffolding								
042 240-0200	Concrete Screen Block, 200 mm x 400 mm, 100 mm thick	SQM	0.250 Foreman 4.000 Bricklayers 2.000 Bricklayer Helpers 0.250 Equip. Operator 0.250 Mixer 0.28 m3 0.500 Power Tools 0.125 Crane 0.125 Fork Lift 0.125 Truck 0.500 Hoist/cranier	52.00	13.00	31.180	36.000	33.590	0.417
042 240-0300	Concrete Screen Block, 200 mm x 400 mm, 200 mm thick			52.00	13.00	24.624	28.000	26.312	0.528
042 240-0500	Concrete Screen Block, 190 mm x 190 mm, 190 mm thick			52.00	13.00	20.064	23.000	21.532	0.648
042 248	GLAZED CONCRETE BLOCK :								
042 248-0200	Glazed Concrete Block, Single face, 200 mm x 400 mm units, 100 mm thick, no reinforcing	SQM	0.250 Foreman 4.000 Bricklayers 2.000 Bricklayer Helpers 0.250 Equip. Operator 0.250 Mixer 0.28 m3 0.500 Power Tools 0.125 Crane 0.125 Fork Lift 0.125 Truck 0.500 Hoist/cranier	52.00	13.00	36.560	42.000	39.280	0.356
042 248-0250	Glazed Concrete Block, Single face, 200 mm x 400 mm units, 150 mm thick, no reinforcing			52.00	13.00	32.370	37.000	34.685	0.402
042 248-0300	Glazed Concrete Block, Single face, 200 mm x 400 mm units, 200 mm thick, no reinforcing			52.00	13.00	27.330	31.000	29.165	0.476
042 248-0700	Glazed Concrete Block, Double face, 200 mm x 400 mm units, 100 mm thick, no reinforcing			52.00	13.00	31.020	36.000	33.510	0.419
042 248-0750	Glazed Concrete Block, Double face, 200 mm x 400 mm units, 150 mm thick, no reinforcing			52.00	13.00	27.470	32.000	29.735	0.473
042 248-0800	Glazed Concrete Block, Double face, 200 mm x 400 mm units, 200 mm thick, no reinforcing			52.00	13.00	23.180	27.000	25.090	0.561
042 248-1050	Glazed Concrete Block for Jamb, bulbouse or square, single, face, 200 mm x 400 mm, 100 mm thick, no reinforcing	EA		52.00	13.00	330.000	380.000	355.000	0.039
042 248-1250	Glazed Concrete Block for Caps, bulbouse or square, 200 mm x 400 mm, 100 mm thick, no reinforcing	LM	0.250 Foreman 4.000 Bricklayers 2.000 Bricklayer Helpers 0.250 Equip. Operator 0.250 Mixer 0.28 m3 0.500 Power Tools 0.125 Crane 0.125 Fork Lift 0.125 Truck 0.500 Hoist/cranier	52.00	13.00	132.000	152.000	142.000	0.098
042 248-1550	Glazed Concrete Block for Cove base, 200 mm x 400 mm, 100 mm thick, no reinforcing			52.00	13.00	99.000	114.000	106.500	0.131
042 248-1600	Glazed Concrete Block for Cove base, 200 mm x 400 mm, 150 mm thick, no reinforcing			52.00	13.00	88.000	101.000	94.500	0.148
042 248-1650	Glazed Concrete Block for Cove base, 200 mm x 400 mm, 200 mm thick, no reinforcing			52.00	13.00	74.000	85.000	79.500	0.176
042 252	INSULATION See also division 072-108								
042 252-0200	Insulation, inserts, styrofoam, plant installed, for block units size 200 mm x 400 mm, 150 mm thick	SQM	1 Bricklayer	8.00	0.00	80.000	92.000	86.000	0.000
042 252-0250	Insulation, inserts, styrofoam, plant installed, for block units size 200 mm x 400 mm, 200 mm thick			8.00	0.00	70.000	81.000	75.500	0.000
042 252-0300	Insulation, inserts, styrofoam, plant installed, for block units size 200 mm x 400 mm, 250 mm thick			8.00	0.00	60.000	69.000	64.500	0.000
042 252-0500	Insulation, inserts, styrofoam, plant installed, for block units size 200 mm x 200 mm, 200 mm thick			8.00	0.00	60.000	69.000	64.500	0.000
042 252-1000	Perlite insulation fill in block cores, site mix, 200 mm x 400 mm x 100 mm blocks		1 Bricklayer 1 Bricklayer Helper	16.00	0.00	180.000	207.000	193.500	0.000
042 252-1500	Perlite insulation fill in block cores, site mix, 200 mm x 400 mm x 150 mm blocks			16.00	0.00	150.000	173.000	161.500	0.000
042 252-1800	Perlite insulation fill in block cores, site mix, 200 mm x 400 mm x 200 mm blocks			16.00	0.00	125.000	144.000	134.500	0.000
042 260	REINFORCING: See division 041-512								
042 300	REINFORCED UNIT MASONRY								
042 304	CONCRETE BLOCK BOND BEAM: Including Scaffolding								

**DIVISION 04 : MASONRY**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN	D. O. MAX	D. O. AVRG	AVRG. E.H.
042 304-0020	Concrete Block Bond Beam, no reinforcement, no grout, regular block 200 mm high, 200 mm thick	LM	0.250 Foreman 4.000 Bricklayers 2.000 Bricklayer Helpers 0.250 Equip. Operator 0.250 Mixer 0.28 m3 0.500 Power Tools 0.125 Crane 0.125 Fork Lift 0.125 Truck 0.500 Hodocamer	52.00	13.00	93.370	107.000	100.185	0.139
042 304-0150	Concrete Block Bond Beam, no reinforcement, no grout, regular block 200 mm high, 300 mm thick			52.00	13.00	71.390	82.000	76.695	0.162
042 304-0500	Concrete Block Bond Beam, lightweight, no reinforcement, no grout, regular block 200 mm high, 200 mm thick			52.00	13.00	98.690	113.000	105.845	0.132
042 304-2100	Concrete Block Bond Beam, including grout and 2 x 20 mm bars reinforcing regular block 200 mm high, 200 mm thick			52.00	13.00	55.390	64.000	59.695	0.235
042 304-2150	Concrete Block Bond Beam, including grout and 2 x 20 mm bars reinforcing regular block 200 mm high, 300 mm thick			52.00	13.00	43.800	50.000	46.500	0.297
042 304-2500	Concrete Block Bond Beam, including grout and 2 x 20 mm bars reinforcing lightweight 200 mm high, 200 mm thick			52.00	13.00	58.950	68.000	63.475	0.221
<b>042 310</b>	<b>CONCRETE BLOCK, EXTERIOR: Reinforced, tooled joints 2 sides styrofoam inserts</b>								
042 310-0100	Exterior concrete Regular block, reinforced, tooled joints 2 sides & styrofoam inserts 200 mm x 400 mm x 150 mm thick	SQM	0.250 Foreman 4.000 Bricklayers 2.000 Bricklayer Helpers 0.250 Equip. Operator 0.250 Mixer 0.28 m3 0.500 Power Tools 0.125 Crane 0.125 Fork Lift 0.125 Truck 0.500 Hodocamer	52.00	13.00	31.340	36.000	33.670	0.415
042 310-0200	Exterior concrete Regular block, reinforced, tooled joints 2 sides & styrofoam inserts 200 mm x 400 mm x 200 mm thick			52.00	13.00	26.450	30.000	28.225	0.491
042 310-0250	Exterior concrete Regular block, reinforced, tooled joints 2 sides & styrofoam inserts 200 mm x 400 mm x 250 mm thick			52.00	13.00	23.640	27.000	25.320	0.550
042 310-0500	Exterior concrete lightweight block, reinforced, tooled joints 2 sides & styrofoam inserts 200 mm x 400 mm x 150 mm thick			52.00	13.00	34.570	40.000	37.285	0.376
042 310-0600	Exterior concrete lightweight block, reinforced, tooled joints 2 sides & styrofoam inserts 200 mm x 400 mm x 200 mm thick			52.00	13.00	29.180	34.000	31.590	0.446
042 310-0650	Exterior concrete lightweight block, reinforced, tooled joints 2 sides & styrofoam inserts 200 mm x 400 mm x 250 mm thick			52.00	13.00	22.400	26.000	24.200	0.580
<b>042 325</b>	<b>CONCRETE BLOCK HIGH STRENGTH: Including Scaffolding</b>								
042 325-0200	Concrete Block, High Strength, Hollow, reinforced, 200 mm x 400 mm units, 20.685 kPa, 100 mm thick	SQM	0.250 Foreman 4.000 Bricklayers 2.000 Bricklayer Helpers 0.250 Equip. Operator 0.250 Mixer 0.28 m3 0.500 Power Tools 0.125 Crane 0.125 Fork Lift 0.125 Truck 0.500 Hodocamer	52.00	13.00	37.170	43.000	40.085	0.350
042 325-0250	Concrete Block, High Strength, Scaffolding not included, Hollow, reinforced, 200 mm x 400 mm units, 20.685 kPa, 150 mm thick			52.00	13.00	32.910	38.000	35.455	0.395
042 325-0300	Concrete Block, High Strength, Hollow, reinforced, 200 mm x 400 mm units, 20.685 kPa, 200 mm thick	SQM	0.250 Foreman 4.000 Bricklayers 2.000 Bricklayer Helpers 0.250 Equip. Operator 0.250 Mixer 0.28 m3 0.500 Power Tools 0.125 Crane 0.125 Fork Lift 0.125 Truck 0.500 Hodocamer	52.00	13.00	27.780	32.000	29.890	0.468
042 325-0500	Concrete Block, High Strength, Hollow, reinforced, 200 mm x 400 mm units, 34.475 kPa, 100 mm thick			52.00	13.00	37.170	43.000	40.085	0.350
042 325-0550	Concrete Block, High Strength, Hollow, reinforced, 200 mm x 400 mm units, 34.475 kPa, 150 mm thick			52.00	13.00	32.910	38.000	35.455	0.395
042 325-0600	Concrete Block, High Strength, Hollow, reinforced, 200 mm x 400 mm units, 34.475 kPa, 200 mm thick			52.00	13.00	27.780	32.000	29.890	0.468
<b>042 330</b>	<b>CONCRETE BLOCK LINTELS: Scaffolding Included</b>								
042 330-0200	Concrete Block, Lintels, including grout and reinforcing, 200 mm x 200 mm x 200 mm, 1x 10 mm bar	LM	0.250 Foreman 4.000 Bricklayers 2.000 Bricklayer Helpers 0.250 Equip. Operator 0.250 Mixer 0.28 m3 0.500 Power Tools 0.125 Crane 0.125 Fork Lift 0.125 Truck 0.500 Hodocamer	52.00	13.00	91.890	106.000	98.945	0.141
042 330-0250	Concrete Block, Lintels, including grout and reinforcing, 200 mm x 200 mm x 200 mm, 2 x 10 mm bar			52.00	13.00	85.150	98.000	91.575	0.153
042 330-0400	Concrete Block, Lintels, including grout and reinforcing, 200 mm x 400 mm x 200 mm, 1x 10 mm bar			52.00	13.00	68.100	78.000	73.050	0.191
042 330-0450	Concrete Block, Lintels, including grout and reinforcing, 200 mm x 400 mm x 200 mm, 2 x 10 mm bar			52.00	13.00	64.520	74.000	69.260	0.204
042 330-1000	Concrete Block, Lintels, including grout and reinforcing, 300 mm x 200 mm x 200 mm, 1x 10 mm bar			52.00	13.00	69.020	79.000	74.010	0.177
042 330-1150	Concrete Block, Lintels, including grout and reinforcing, 300 mm x 200 mm x 200 mm, 2x 16 mm bar			52.00	13.00	59.920	69.000	64.460	0.217
042 330-1200	Concrete Block, Lintels, including grout and reinforcing, 300 mm x 200 mm x 200 mm, 2x 20 mm bar			52.00	13.00	54.310	62.000	58.155	0.239



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CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN	D. O. MAX	D. O. AVRG	AVRG. E.H.
044 104-0100	Rough Stone Wall, dry, Random fieldstone, under 500 mm thick	CUM	0.25 Bricklayer Foreman 1.00 Bricklayer 2.00 Bricklayer Helpers 0.50 Equip. Operator 0.50 Forlift For Handling	30.00	4.00	1.800	2.000	1.900	2.222
044 104-0150	Rough Stone Wall, dry, Random fieldstone, over 500 mm thick	CUM		30.00	4.00	2.000	3.000	2.500	2.000
<b>044 200</b>	<b>CUT STONE</b>								
<b>044 204</b>	<b>BLUESTONE:</b>								
044 201-0500	Bluestone, cut to size sills, natural cleft, 250 mm wide to 1.6 m long, 40 mm thick	LM	0.25 Bricklayer Foreman 1.00 Bricklayer 1 Bricklayer Helper	18.00	0.00	21.000	24.000	22.500	0.000
044 201-0550	Bluestone, cut to size sills, natural cleft, 250 mm wide to 1.6 m long, 50 mm thick			18.00	0.00	19.000	22.000	20.500	0.000
044 201-1000	Bluestone, cut to size stair treads, natural cleft, 310 mm wide to 1.6 m long, 38 mm thick		0.25 Bricklayer Foreman 1.00 Bricklayer 2.00 Bricklayer Helpers 0.50 Equip. Operator 0.50 Forlift For Handling	30.00	4.00	27.000	31.000	29.000	0.148
044 201-1050	Bluestone, cut to size stair treads, natural cleft, 310 mm wide to 1.6 m long, 50 mm thick			30.00	4.00	24.000	28.000	26.000	0.167
044 201-1100	Bluestone, cut to size stair treads, smooth finish, 310 mm wide to 1.6 m long, 38 mm thick			30.00	4.00	27.000	31.000	29.000	0.148
<b>044 500</b>	<b>STONE VENEER</b>								
<b>044 504</b>	<b>ASHLAR VENEER:</b>								
044 504-0200	Stone veneer 30 mm + or - thick, random or random rectangular sawn face, split joints, Mortar set including pointing & cleaning, scaffolding not included, average	SQM	0.25 Bricklayer Foreman 4.00 Bricklayer 2.00 Bricklayer Helpers 4.00 Common Laborer 1.00 Equip. Operator 0.75 Truck crane 11 ton 0.50 Power Tool 0.125 Mixer 0.28 M3	82.00	11.00	30.239	35.000	32.619	0.364
044 504-0240	Stone veneer 50 mm + or - thick, random or random rectangular sawn face, split joints, Mortar set including pointing & cleaning, scaffolding not included, average			82.00	11.00	25.745	30.000	27.873	0.427
044 504-0280	Stone veneer 70 mm + or - thick, random or random rectangular sawn face, split joints, Mortar set including pointing & cleaning, scaffolding not included, average			82.00	11.00	20.663	24.000	22.331	0.532
044 504-0300	Stone veneer 100 mm + or - thick, random or random rectangular sawn face, split joints, Mortar set including pointing & cleaning, scaffolding not included, average			82.00	11.00	15.675	18.000	16.838	0.702
044 504-0700	Precast concrete panel 150 mm overall thickness, stone veneered, 600mmx300mm, 50 mm thick, high rise building more than 10 floor & up to 15 floors.	SQM	0.25 Bricklayer Foreman 4.00 Steel Structure Workers 4.00 Bricklayer 2.00 Bricklayer Helpers 0.50 Equip. Operator 0.25 Tower crane 75 m high 45 m boom, 11 ton tip load 0.25 Truck 1.00 Power Tool 1.00 HD scanner	86.00	20.00	13.410	15.000	14.205	1.491
044 504-1000	Precast concrete panel with stone veneer, overall thickness, 200 mm, stone 400 mmx800x50 mm, mechanical installation, high rise building over 15 floors & up to 22 floors.			86.00	14.00	12.420	14.000	13.210	1.127
044 504-2000	Precast concrete panel with granite veneer, overall thickness, 200 mm, Stone 400 mm x 800 x 50 mm, mechanical installation, high rise building over 22 floors & up to 30 floors			86.00	14.00	11.730	13.000	12.365	1.194
<b>044 508</b>	<b>LIGHTWEIGHT NATURAL STONE:</b>								
044 508-0100	Lightweight natural stone lava type, veneer, rubble face, or sawed face, sawed back, irregular shapes	SQM	0.25 Bricklayer Foreman 4.00 Bricklayer 4.00 Bricklayer Helpers 1.00 Equip. Operator 0.75 Truck crane 11 ton 0.50 Power Tool 0.125 Mixer	74.00	11.00	27.100	31.000	29.050	0.406
<b>044 550</b>	<b>MARBLE</b>								
<b>044 554</b>	<b>MARBLE:</b>								
044 554-0100	Marble base, polished, 20 mm thick, polished, 150 mm high	LM	0.125 Foreman 3.000 Bricklayers 2.000 Bricklayer Helpers 0.125 Equip. Operator 0.500 Power Tool	42.00	5.00	65.000	72.000	67.500	0.079
044 554-0600	Marble facing for Columns, cornices, mouldings, etc., hand or special machine cut, up to 4.00 meter high, average	SQM		42.00	5.00	9.000	10.000	9.500	0.556
044 554-1050	Marble facing, polished finish, cut to size, 20 mm to 25 mm thick mechanical installation average			42.00	5.00	12.000	14.000	13.000	0.417
044 554-1300	Marble facing, polished finish, cut to size, 32 mm thick, mechanical installation, average			42.00	5.00	10.500	12.000	11.250	0.476
044 554-1400	Marble facing, polished finish, cut to size, 40 mm thick, mechanical installation, average			42.00	5.00	9.000	10.000	9.500	0.556
044 554-1500	Marble facing, polished finish, cut to size, 50 mm thick, mechanical installation average			42.00	5.00	6.250	9.000	6.625	0.714
044 554-1550	Marble, wall facing, cut to size, 300 x 600 x 40 mm thick Travertine, scaffolding not included, average			42.00	5.00	9.000	10.000	9.500	0.556
044 554-1600	Marble, wall facing, cut to size, 300 x 600 x 40 mm thick Travertine Building from 6 floors up to 10 floors, scaffolding not included, Average			42.00	5.00	6.000	9.000	6.500	0.625
044 554-2200	Marble, Window Sills, 150 mm x 20 mm thick			42.00	5.00	61.000	70.000	65.500	0.082



**DIVISION 04 : MASONRY**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN	D. O. MAX	D. O. AVR	AVRG. E.H.
044 554-2510	Marble, Flooring, polished tiles, 300 mm x 300 mm x 10 mm, thin set, Average		0.250 Bricklayer Foreman 3.000 Bricklayer 2.000 Bricklayer Helper 0.125 Equip. Operator 0.125 Mixer 0.25 m <sup>3</sup> 0.125 Crane 11 Ton 0.500 Power Tool 0.500 Hddcamer	44.00	10.00	20.250	23.000	21.625	0.494
044 554-2700	Marble, Flooring, polished tiles, 300 mm x 300 mm x 10 mm, mortar bed, Average			44.00	10.00	16.500	19.000	17.750	0.606
044 554-2780	Marble, Flooring, polished tiles, 300 mm x 300 mm x 20 mm, Travertine, mortar bed, average			44.00	10.00	15.000	17.000	16.000	0.667
044 554-2800	Marble flooring for patio tile, non-slip, 13 mm thick, mortar bed, flame finish			44.00	10.00	18.000	21.000	19.500	0.556
044 554-2900	Marble partitions for shower or toilet 20 mm thick			44.00	10.00	18.000	21.000	19.500	0.556
044 554-3210	Marble for stair risers 20 mm thick, 150 mm high	LM	0.250 Bricklayer Foreman 1.000 Bricklayer 2.000 Bricklayer Helper 1.000 Equip. Operator 1.000 Truck Crane 11 Ton	34.00	8.00	19.000	22.000	20.500	0.421
044 554-3360	Marble stair treads, 300 mm wide x 30 mm thick random lengths			34.00	8.00	19.000	22.000	20.500	0.421
044 554-3500	Marble for thresholds, 910 mm L, 20 mm thick, 100 mm to 150 mm W, Plain or Beveled	EA		34.00	8.00	19.800	23.000	21.400	0.404
044 554-3700	Marble for window Sills, polished 20 mm thick, 130 mm wide	LM		34.00	8.00	18.000	21.000	19.500	0.444
<b>044 600</b>	<b>LIMESTONE</b>								
<b>044 604</b>	<b>LIMESTONE:</b>								
			<i>See also Ashlar Veneer, Division 044-504</i>						
044 604-2020	Limestone, Coping, smooth finish, top & 2 sides, 230 mm x 100 mm x 6 m long	EA	0.250 Bricklayer Foreman 1.000 Bricklayer 2.000 Bricklayer Helper 1.000 Equip. Operator 1.000 Truck Crane 11 Ton	34.00	8.00	5.000	6.000	5.500	1.600
044 604-2030	Limestone, Coping, smooth finish, top & 2 sides, 230 mm x 100 mm x 8 m long			34.00	8.00	4.000	5.000	4.500	2.000
044 604-2050	Limestone, Coping, smooth finish, top & 2 sides, 230 mm x 100 mm x 2 m long			34.00	8.00	15.000	17.000	16.000	0.533
044 604-2300	Limestone for steps, extra hard, 356 mm wide, 150 mm rise	LM		34.00	8.00	20.000	23.000	21.500	0.400
<b>044 650</b>	<b>GRANITE:</b>								
<b>044 651</b>	<b>GRANITE:</b>								
044 651-0150	Granite Veneer, polished face, 20 mm to 30 mm thick, mechanical installation straight job, average	SQM	0.125 Bricklayer Foreman 3.000 Bricklayer 2.000 Bricklayer Helper 0.125 Equip. Oper. (crane) 0.125 Truck Crane 11 metric ton 0.500 Power Tool	42.00	5.00	10.500	12.000	11.250	0.476
044 651-0300	Granite Veneer, polished face, 40 mm to 65 mm thick, mechanical installation average			42.00	5.00	8.250	9.000	8.625	0.606
044 651-0700	Granite Veneer, polished face, 65 mm to 100 mm thick, mechanical installation average			42.00	5.00	7.500	9.000	8.250	0.667
044 651-0800	Granite Veneer, polished face 20 mm thick to 30 mm thick, mechanical installation for curved wall under 1.5 m radius			42.00	5.00	7.350	8.000	7.675	0.680
044 651-0820	Granite Veneer, polished face 40 mm thick to 60 mm thick, for curved wall under 1.5 m radius			42.00	5.00	5.780	7.000	6.390	0.865
044 651-0840	Granite Veneer, polished face 65 mm thick to 100 mm thick, for curved wall under 1.5 m radius			42.00	5.00	5.250	6.000	5.625	0.952
044 651-0860	Granite veneer, cut to size, 300 mm x 600 mm x 30 mm, mechanical installation			42.00	5.00	11.500	13.000	12.250	0.435
044 651-0880	Granite veneer, cut to size, 400 mm x 400 mm x 30 mm, mechanical installation			42.00	5.00	10.500	12.000	11.250	0.476
044 651-0900	Granite veneer, cut to size, 300 mm x 300 mm x 30 mm, mechanical installation	SQM	0.125 Bricklayer Foreman 3.000 Bricklayer 2.000 Bricklayer Helper 0.125 Equip. Oper. (crane) 0.125 Truck Crane 11 metric ton 0.500 Power Tool	42.00	5.00	9.200	11.000	10.100	0.543
044 651-0920	Granite veneer, cut to size, 300 mm x 600 mm x 40 mm, mechanical installation			42.00	5.00	9.000	10.000	9.500	0.556
044 651-0940	Granite veneer, cut to size, 400 mm x 400 mm x 40 mm, mechanical installation			42.00	5.00	8.250	10.000	9.125	0.606
044 651-0960	Granite veneer, cut to size, 300 mm x 300 mm x 40 mm, mechanical installation			42.00	5.00	7.220	8.000	7.610	0.893
044 651-0980	Granite veneer, cut to size, 400 mm x 800 mm x 50 mm, mechanical installation			42.00	5.00	12.380	14.000	13.190	0.404
044 651-1000	Granite veneer, cut to size, 600 mm x 1200 mm x 60 mm, mechanical installation			42.00	5.00	14.850	17.000	15.925	0.337
044 651-2000	Granite veneer to high rise building mole ( 6-10 floors); mechanical installation, 40 to 60 mm thick			42.00	5.00	7.000	8.000	7.500	0.714
044 651-2100	Granite veneer to high rise building mole ( 6-10 floors); mechanical installation, 65 to 100 mm thick			42.00	5.00	6.000	7.000	6.500	0.833
044 651-2200	Precast concrete panel with granite veneer, overall thickness, 200 mm, Granite 400 mm x 800 x 50 mm, mechanical installation, high rise building over 15 floors		0.25 Bricklayer Foreman 4.00 Steel Structure Workers 4.00 Bricklayer 2.00 Bricklayer Helper 0.50 Equip. Operator 0.250 Tower crane 120 m high 45 m boom, 11 ton tip load 0.25 Truck 1.00 Power Tool 1.00 Hddcamer	86.00	20.00	15.420	18.000	16.710	1.297
044 651-2210	Precast concrete panel with granite veneer, overall thickness, 200 mm, Granite 400 mm x 800 x 50 mm, mechanical installation, high rise building over 15 floors & up to 22 floors			86.00	14.00	15.000	17.000	16.000	0.933
044 651-2220	Precast concrete panel with granite veneer, overall thickness, 200 mm, Granite 400 mm x 800 x 50 mm, mechanical installation, high rise building over 22 floors & up to 30 floors			86.00	14.00	14.000	16.000	15.000	1.000

**DIVISION 04 : MASONRY**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN	D. O. MAX	D. O. AVRG	AVRG. E.H.
044 651-2500	Granite Stair riser, 20 mm thick, 150 mm high, average	LM	0.250 Bricklayer Foreman 1.000 Bricklayer 2.000 Bricklayer Helper 1.000 Equip. Operator 1.000 Truck Crane 11 Ton	34.00	8.00	30.000	35.000	32.500	0.267
044 651-2550	Granite Stair tread, 30 mm thick, 310 mm wide, 1.2 meter long, average	"	"	34.00	8.00	30.000	35.000	32.500	0.267
044 651-2800	Granite Pavers, 100 mm x 100 mm x 100 mm blocks, split face and joints, average	SQM	0.125 Bricklayer Foreman 3.000 Bricklayer 2.000 Bricklayer Helper 0.125 Equip. Operator 0.125 Mixer 0.25 m3 0.125 Crane 11 Ton 0.500 Power Tool 0.125 Hodcarrier	42.00	7.00	13.500	16.000	14.750	0.519
044 651-4000	Granite Soffits, 50 mm thick, average			42.00	7.00	6.750	8.000	7.375	1.037
044 651-4200	Granite Soffits, 100 mm thick, average			42.00	7.00	6.750	8.000	7.375	1.037
044 651-5000	Granite Flooring, 300 mm x 300 mm 20 mm thick, mortar bed, average			42.00	7.00	15.000	17.000	16.000	0.457
044 651-5000	Granite Flooring, 300 mm x 300 mm 30 mm thick, mortar bed, average	↓	↓	42.00	7.00	13.000	15.000	14.000	0.536
044 700	<b>SANDSTONE</b>								
044 704	<b>SANDSTONE OR BROWNSTONE: Add for scaffolding</b>								
044 704-1000	Sandstone veneer, cut to size, smooth finish, mechanical installation, 200 mm x 70 mm x 40 mm	SQM	0.125 Bricklayer Foreman 3.000 Bricklayer 2.000 Bricklayer Helper 0.125 Equip. Operator 0.125 Crane 11 Ton 0.500 Power Tool	42.00	5.00	6.750	8.000	7.375	0.741
044 704-1200	Sandstone veneer, cut to size, smooth finish, mechanical installation, 300 mm x 110 mm x 40 mm			42.00	5.00	7.430	9.000	8.215	0.673
044 704-1400	Sandstone veneer, cut to size, smooth finish, mechanical installation, 300 mm x 150 mm x 40 mm			42.00	5.00	8.540	10.000	9.270	0.585
044 704-1600	Sandstone veneer, cut to size, smooth finish, mechanical installation, 400 mm x 200 mm x 40 mm			42.00	5.00	9.000	10.000	9.500	0.556
044 704-1800	Sandstone veneer, cut to size, smooth finish, mechanical installation, 400 mm x 250 mm x 40 mm			42.00	5.00	9.900	11.000	10.450	0.505
044 704-2000	Sandstone veneer, cut to size, smooth finish, mechanical installation, 600 mm x 300 mm x 20 mm			42.00	5.00	10.500	12.000	11.250	0.476
044 704-2400	Sandstone veneer, cut to size, smooth finish, mechanical installation, 600 mm x 300 mm x 40 mm	↓	↓	42.00	5.00	9.750	11.000	10.375	0.513
044 704-2600	Sandstone veneer, cut to size, smooth finish, mechanical installation, 600 mm x 300 mm x 50 mm	SQM	0.125 Bricklayer Foreman 3.000 Bricklayer 2.000 Bricklayer Helper 0.125 Equip. Operator 0.125 Crane 11 Ton 0.500 Power Tool	42.00	5.00	9.000	10.000	9.500	0.556
044 704-2800	Sandstone veneer, cut to size, bush hammered, mechanical installation, 600 mm x 300 mm x 60 mm			42.00	5.00	8.250	10.000	9.125	0.606
044 704-3000	Sandstone veneer, cut to size, bush hammered, mechanical installation, 600 mm x 300 mm x 40 mm			42.00	5.00	9.750	11.000	10.375	0.513
044 704-3200	Sandstone veneer, cut to size, bush hammered, mechanical installation, 600 mm x 300 mm x 50 mm	↓	↓	42.00	5.00	9.000	10.000	9.500	0.556
044 704-3400	Sandstone veneer, cut to size, bush hammered, mechanical installation, 600 mm x 300 mm x 60 mm	SQM	0.125 Bricklayer Foreman 3.000 Bricklayer 2.000 Bricklayer Helper 0.125 Equip. Operator 0.125 Crane 11 Ton 0.500 Power Tool	42.00	5.00	8.250	9.000	8.625	0.606
045	<b>MASONRY RESTORATION &amp; CLEANING/REFRACTORIES</b>								
045 100	<b>MASONRY CLEANING</b>								
045 106	<b>CLEAN AND POINT:</b>								
045 106-0010	Clean and point smooth brick	SQM	1 Bricklayer	8.00	0.00	23.000	26.000	24.500	0.000
045 106-0100	Clean and point rough brick	"	"	8.00	0.00	20.000	23.000	21.500	0.000
045 108	<b>WASHING BRICK:</b>								
045 108-0010	Washing smooth brick, acid wash	SQM	1 Bricklayer	8.00	0.00	42.000	48.000	45.000	0.000
045 108-0050	Washing rough brick acid wash			8.00	0.00	30.000	35.000	32.500	0.000
045 108-0060	Washing stone, acid wash	↓	↓	8.00	0.00	45.000	52.000	48.500	0.000
045 550	<b>FLUE LINERS</b>								
045 554	<b>FLUE LINING:</b>								
045 554-0100	Restoration Flue Lining, including mortar joints	SQM	1 Bricklayer 1 Bricklayer Helper	16.00	0.00	18.000	21.000	19.500	0.000



A decorative geometric pattern, likely a traditional Islamic or Arabesque design, is located in the top right corner of the page. It features a complex, repeating lattice of interlocking lines forming star and floral motifs. The pattern is rendered in a dark, textured style, possibly a woodcut or a high-contrast print, and is partially obscured by a diagonal white line that runs from the top left towards the bottom right.

# Division 5

## Metals

## Division 5.. Metals..

### Estimating Tips:

#### 050 Materials, Coating & Fastenings:

Nuts, bolts, washers, connection angles and plates can add a significant amount to both the tonnage of a structural steel job as well as the estimated cost.

Simple construction consists generally of field bolted connections with lateral bracing supplied by other elements of the building, such as masonry walls or x-bracing. The estimator should be aware, however, that shop connections may be accomplished by welding or bolting.

The method may be particular to the fabrication shop and may have an impact on the estimated cost.

Some other items shall be included when preparing an estimate on structural steel buildings such as extra costs for shapes, drawings, assembling costs like templates and shop painting.

#### 052 Steel Joists: العوارض

In any given project the total weight of open web steel joists is determined by the loads to be supported and the design. However, economies can be realized in minimizing the amount of labor used to place the joists. This is done by maximizing the joists spacing and therefore minimizing the number of joists required to be installed on the job.

#### 053 Metal Decking: التزيين

The take off and estimating of metal deck involves more than simply the area of the floor or roof and the type of deck specified or shown on the drawings. Many different sizes and types of openings may exist. Small openings for individual pipes or conduits may be drilled after the floor/ roof is installed, but larger openings may require special deck lengths as well as reinforcing or structural support.

#### 055 Metal Fabrications: الصناعات

The most economical steel stairs, pipe railing, window guard, curb angles, floor & trench frames are those that use common materials, standard details and most importantly, a uniform and relatively simple method of field assembly. Risers and treads are usually made by specialty shops, and it is most economical to use a typical

detail in as many places as possible. The stairs should be pre-assembled and shipped directly to the site.

Steel stack costs and labor vary widely with stack height, number of joints and transportation.



**DIVISION 05 : METALS**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN.	D. O. MAX.	D. O. AVRG	AVRG. E.H.
<b>050</b>	<b>METAL MATERIALS, FINISHES &amp; FASTENINGS</b>								
<b>050 500</b>	<b>METAL FASTENING:</b>								
<b>050 510</b>	<b>CURB EDGING:</b>								
050 510-0010	Curb Edging St. angle w/anchors, 25 mm x 25 mm, 1.2 kg/m	LM	0.375 Struc. Steel Foreman 2.000 Steel Fitter 1.000 Steel Welder 1.000 Welding Machine 1.000 Power Tool	27	16	80.000	92.000	86.000	0.200
050 510-0100	Curb Edging St. angle w/anchors, 50 mm x 50 mm, 5.8 kg/m			27	16	75.000	86.000	80.500	0.213
050 510-0200	Curb Edging St. angle w/anchors, 76 mm x 76 mm, 9.1 kg/m			27	16	70.000	81.000	75.500	0.229
050 510-0300	Curb Edging St. angle w/anchors, 100 mm x 100 mm, 12.2 kg/m			27	16	60.000	69.000	64.500	0.267
050 510-1000	Curb Edging St. angle w/anchors, 150 mm x 100 mm, 18.3 kg/m			27	16	55.000	63.000	59.000	0.291
050 510-1050	Curb Edging Steel channels with anchors, on forms, 75 mm channel, 7.4 kg/m			27	16	65.000	75.000	70.000	0.246
050 510-1100	Curb Edging Steel channels with anchors, on forms, 100 mm channel, 8 kg/m			27	16	60.000	69.000	64.500	0.267
050 510-1200	Curb Edging Steel channels with anchors, on forms, 150 mm channel, 12 kg/m			27	16	55.000	63.000	59.000	0.291
050 510-1300	Curb Edging Steel channels with anchors, on forms, 200 mm channel, 17 kg/m			27	16	50.000	58.000	54.000	0.320
050 510-1400	Curb Edging Steel channels with anchors, on forms, 250 mm channel, 23 kg/m			27	16	45.000	52.000	48.500	0.356
050 510-1500	Curb Edging Steel channels with anchors, on forms, 310 mm channel, 31 kg/m			27	16	30.000	35.000	32.500	0.533
050 510-2050	Steel channels with anchors, on forms, for curved edging 200 mm channel, 17 kg/m			27	16	44.000	51.000	47.500	0.364
<b>051</b>	<b>STRUCTURAL METAL FRAMING</b>								
<b>051 100</b>	<b>BRACING</b>								
<b>051 108</b>	<b>BRACING:</b>								
051 108-0300	Bracing Let-in, "T" shaped, 20 ga. galv. steel, studs at 410 mm O.C.	LM	0.250 Steel Foreman 1.000 Steel Fitter 1.000 Power Tool	10	8	135.000	155.000	145.000	0.059
051 108-0400	Bracing Let-in, "T" shaped, 20 ga. galv. steel, studs at 610 mm O.C.			10	8	140.000	161.000	150.500	0.057
051 108-0500	Bracing Let-in, "T" shaped, 16 ga. galv. steel straps, studs at 410 mm O.C.			10	8	140.000	161.000	150.500	0.057
<b>051 110</b>	<b>PIPE SUPPORT FRAMING:</b>								
051 110-0010	Pipe Support Framing, under 15 kg/m	KG	0.375 Struc. Steel Foreman 2.000 Steel Fitter 1.000 Steel Welder 1.000 Welding Machine 1.000 Power Tool	27	16	1400.000	1610.000	1505.000	0.011
051 110-0200	Pipe Support Framing, 15.1 to 30 kg/m			27	16	1800.000	1840.000	1720.000	0.010
051 110-0500	Pipe Support Framing, over 30 kg/m			27	16	1600.000	1840.000	1720.000	0.010
<b>051 200</b>	<b>STRUCTURAL STEEL:</b>								
<b>051 204</b>	<b>ANCHOR BOLTS:</b>								
051 204-0010	Anchor Bolts See division 041-504								
<b>051 212</b>	<b>CANOPY FRAMING:</b>								
051 212-0010	Canopy Framing 150 mm and 200 mm members	KG	0.375 Struc. Steel Foreman 2.000 Steel Fitter 1.000 Steel Welder 1.000 Welding Machine 1.000 Power Tool	27	16	1000.000	1150.000	1075.000	0.016
<b>051 215</b>	<b>CEILING SUPPORTS:</b>								
051 215-1000	Entrance door/folding partition supports, 1.8 m x 2.4 m	LM	0.375 Struc. Steel Foreman 2.000 Steel Fitter 1.000 Steel Welder 1.000 Welding Machine 1.000 Power Tool	27	16	14.000	16.000	15.000	1.143
051 215-1200	Lintels or shelf angles, hung exterior hot dipped galv.			27	16	75.000	86.000	80.500	0.213
051 215-1400	Monitor support 1.8 m Perimeter, 1.2 m hung from ceiling by expansion bolted	EA		27	16	4.000	5.000	4.500	4.000
051 215-1450	Monitor support 1.8 m Perimeter, 1.2 m hung from ceiling by pre-set inserts			27	16	5.000	6.000	5.500	3.200
051 215-1800	Motor supports for overhead electric doors 6 m wide			27	16	4.000	5.000	4.500	4.000
051 215-1700	Partition support for heavy folding partitions 2.6 m high	LM		27	16	10.000	12.000	11.000	1.600
051 215-2000	Rolling grilles & fire door supports, to 2.4 m high			27	16	15.000	17.000	16.000	1.067
051 215-2400	Toilet partition support, wall hung, 1.6 m high			27	16	15.000	17.000	16.000	1.067
<b>051 220</b>	<b>COLUMNS:</b>								
051 220-0010	Aluminium, extruded, 200 mm dia	LM	0.375 Struc. Steel Foreman 2.000 Steel Fitter 1.000 Steel Welder 1.000 Welding Machine 1.000 Power Tool	27	16	60.000	69.000	64.500	0.267
051 220-0300	Aluminium, extruded, 310 mm dia			27	16	32.000	37.000	34.500	0.500
051 220-0500	Aluminium, extruded, Square columns 200 mm			27	16	36.000	41.000	38.500	0.444
051 220-0520	Aluminium, extruded, Square columns 380 mm	LM	0.375 Struc. Steel Foreman 2.000 Steel Fitter 1.000 Steel Welder 1.000 Welding Machine 1.000 Power Tool	27	16	28.000	32.000	30.000	0.571
051 220-0600	Steel concrete filled, extra strong pipe, 89 mm diameter	LM	0.500 Steel Foreman 4.000 Steel Workers 1.000 Crane operator 1.000 Mobile Crane	44	8	150.000	173.000	161.500	0.053
051 220-0930	Steel concrete filled, extra strong pipe, 150 mm diameter			44	8	250.000	286.000	269.000	0.032
051 220-1700	Steel pipe, extra strong, no concrete, 100 mm dia. x 3.7 m	EA		44	8	44.000	51.000	47.500	0.182
051 220-1850	Steel pipe, extra strong, no concrete, 200 mm dia. x 4.3 m			44	8	38.000	44.000	41.000	0.211
051 220-1950	Steel pipe, extra strong, no concrete, 310 mm dia. x 5.5 m			44	8	32.000	37.000	34.500	0.250



**DIVISION 05 : METALS**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E.H.
051 220-3300	Square structural tubing, 100 mm to 150 mm, light section	KG		44	B	4000.000	4600.000	4300.000	0.002
051 220-3600	Square structural tubing, 100 mm to 150 mm, Heavy section			44	B	8500.000	9775.000	9127.500	0.001
051 220-4000	Square structural tubing, 100 mm to 150 mm, light section, concrete filled, 4.3 m high	EA		44	B	40.000	46.000	43.000	0.200
051 220-3600	Square structural tubing, 150 mm to 150 mm, x6 4 mm, 4.3 m high			44	B	36.000	41.000	36.500	0.222
051 220-5200	Rectangular structural tubing, 127mm to 150 mm wide, Heavy section	KG		44	B	9500.000	10825.000	10212.500	0.001
051 220-5300	Rectangular structural tubing, 178mm to 254 wide, light section			44	B	10500.000	12075.000	11287.500	0.001
051 220-5650	Rectangular structural tubing, 254 mm x 152 mm x 9.5 mm, 4.3 m high	EA		44	B	38.000	44.000	41.000	0.211
051 220-6800	Wide flange column, A36 steel, Eye beam, (1) 2 tier, W 200x36 (W8x24)	LM		44	B	260.000	299.000	279.500	0.031
051 220-6900	Wide flange column, A36 steel (1) Beam, 2 tier, W 200x71 (W8x48)			44	B	240.000	276.000	258.000	0.033
051 220-6950	Wide flange column, A36 steel (1) Beam, 2 tier, W 200x100 (W8x67)			44	B	225.000	259.000	242.000	0.036
051 220-7100	Wide flange column, A36 steel (1) Beam, 2 tier, W 250x167 (W10x112)			44	B	230.000	265.000	247.500	0.036
051 220-7250	Wide flange column, A36 steel (1) Beam, 2 tier, W 310x178 (W12x120)			44	B	230.000	265.000	247.500	0.036
051 220-7300	Wide flange, A36 steel "I" Beam, 2 tier, W 310x283 (W12x190)			44	B	210.000	242.000	226.000	0.038
051 220-7400	Wide flange, A36 steel "I" Beam, 2 tier, W 360x178 (W14x120)			44	B	220.000	253.000	236.500	0.036
051 220-7450	Wide flange, A36 steel "I" Beam, 2 tier, W 360x262 (W14x176)			44	B	210.000	242.000	226.000	0.038
051 230	<b>LIGHTWEIGHT FRAMING:</b>								
051 230-0200	For steel studs see division 092-612								
051 230-0400	Angle framing, 106 mm and larger	KG	0.500 Steel Foreman 4.000 Steel Workers 1.000 Crane operator 1.000 Mobile Crane	44	B	1000.000	1150.000	1075.000	0.008
051 230-0450	Angle framing, less than 100 mm			44	B	650.000	747.000	698.500	0.012
051 230-0600	Channel framing, 200 mm and larger			44	B	1200.000	1380.000	1290.000	0.007
051 230-1000	Continuous slotted channel framing system, average		2 Skilled Worker	16	D	700.000	806.000	752.500	0.000
051 230-1300	Cross bracing rods, 19mm diameter		0.375 Struct. Steel Foreman 2.000 Steel Fitter 1.000 Steel Welder 1.000 Welding Machine 1.000 Power Tool	27	16	420.000	463.000	451.500	0.038
051 230-1320	Cross bracing rods, 25 mm diameter			27	16	420.000	463.000	451.500	0.038
051 230-1330	Cross bracing angle, 127 mm x 127 mm x 9.5 mm			27	16	1650.000	1898.000	1774.000	0.010
051 230-1350	Hanging lintels, average			27	16	500.000	575.000	537.500	0.032
051 230-1380	Roof frames, up to 1.0 meter square & 1.5 m span		1.000 Steel Foreman 4.000 Steel Workers 1.000 Crane operator 1.000 Mobile Crane	48	B	1400.000	1610.000	1505.000	0.006
051 230-1600	Tubular aluminum framing for window wall, average			48	B	350.000	403.000	376.500	0.023
051 232	<b>LINTELS:</b>								
051 232-0100	Plain steel angles, under 225kg	KG	2.00 Steel Workers	16	D	425.000	489.000	457.000	0.000
051 232-0100	Plain steel angles, above 225kg			16	D	500.000	575.000	537.500	0.000
051 232-2700	Steel angles, 102 mm x 89 mm, 6.4 mm thick, 2.7 m long			16	D	55.000	63.000	59.000	0.000
051 232-3500	For precast lintels, see div. 034-602								
051 238	<b>SPACE FRAME:</b>								
051 238-0010	Steel 1.2 m modular, 12 to 21 m spans, 26.9 kg/m2 average	SQM	1.00 Steel Foreman 4.00 Steel Workers 1.00 Crane Operator 1.00 Mobile Crane	48	B	27.000	31.000	29.000	0.295
051 238-0400	Steel 1.5 m modular, 12 to 21 m spans, 22.0 kg/m2 average			48	B	40.000	46.000	43.000	0.200
051 240	<b>STEEL CUTTING:</b>								
051 240-0100	Steel Cutting Hand burning, including preparation, torch cutting and grinding, no staging, steel to 13 mm thick	LM	0.125 Foreman 1.000 Steel Foreman 1.000 Tools Set	8	B	16.000	18.000	17.000	0.500
051 240-0150	Steel Cutting Hand burning, including preparation, torch cutting and grinding, no staging, steel 19 mm thick			9	B	12.000	14.000	13.000	0.667
051 240-0200	Steel Cutting Hand burning, including preparation, torch cutting and grinding, no staging, steel 25 mm thick	LM	0.125 Foreman 1.000 Steel Foreman 1.000 Tools Set	9	B	10.000	12.000	11.000	0.800
051 250	<b>STRUCTURAL STEEL MEMBERS:</b>								
051 250-0100	Structural steel members common wide flange (WF) sizes, spans 3 m to 15 m including bolted connections and erection W150 x 13 (W 6 x 9)	LM	1.00 Steel Foreman 4.00 Steel Workers & Welder 1.00 Crane Operator 1.00 Mobile Crane 1.00 Drill 1 HP 1.00 Welding MC 1.00 Arc Torch Set 0.25 Hydraulic Jacks Set of 2	48	34	133.000	153.000	143.000	0.256
051 250-0140	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W150 x 30 (W 6 x 20)			48	34	118.000	136.000	127.000	0.245
051 250-0320	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W200 x 22 (W 8 x 15)			48	34	124.000	143.000	133.500	0.174
051 250-0500	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W200 x 46 (W 8 x 31)			48	34	124.000	143.000	133.500	0.274
051 250-0540	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W200 x 71 (W 8 x 48)			48	34	114.000	131.000	122.500	0.258
051 250-0600	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W250 x 18 (W10 x 12)			48	34	180.000	207.000	193.500	0.169
051 250-0740	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W250 x 49 (W10 x 33)			48	34	170.000	196.000	183.000	0.190
051 250-0900	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W250 x 73 (W10 x 49)			48	34	152.000	175.000	163.500	0.224
051 250-1500	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W310 x 35 (W12 x 26)			48	34	178.000	205.000	191.500	0.191



**DIVISION 05 : METALS**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN.	D. O. MAX.	D. O. AVRG	AVRG. E.H.
051 250-1560	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W310 x 74 (W12 x 50)			48	34	152,000	175,000	163,500	0.224
051 250-1700	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W310 x107 (W12 x 72)			48	34	148,000	170,000	159,000	0.230
051 250-1740	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W310 x129 (W12 x87)			48	34	138,000	159,000	148,500	0.246
051 250-1900	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W360 x39 (W14 x26)			46	34	241,000	277,000	259,000	0.141
051 250-2300	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W360 x51 (W14 x34)			46	34	223,000	256,000	239,500	0.152
051 250-2380	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W360 x134 (W14 x90)			48	34	171,000	197,000	184,000	0.199
051 250-2500	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W360 x179 (W14 x120)			48	34	147,000	169,000	158,000	0.231
051 250-2700	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W410 x39 (W16 x26)			48	34	255,000	293,000	274,000	0.133
051 250-3120	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W410 x75 (W16 x50)			48	34	216,000	248,000	232,000	0.157
051 250-3140	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W410 x100 (W16 x67)			48	34	192,000	221,000	206,500	0.177
051 250-3300	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W460 x52 (W18 x35)		1.00 Steel Foreman 5.00 Steel Workers 1.00 Welder 1.00 Crane Operator 1.00 Mobile Crane 1.00 Drill 1 HP 1.00 Welding MIG 1.00 Arc Torch Set 0.25 Hydraulic Jacks Set of 2	64	34	230,000	265,000	247,500	0.148
051 250-3900	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W460 x82 (W18 x55)			64	34	250,000	288,000	269,000	0.135
051 250-3960	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W460 x126 (W18 x86)			64	34	224,000	258,000	241,000	0.152
051 250-3980	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W530 x66 (W21 x44)			64	34	269,000	309,000	289,000	0.126
051 250-4500	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W530 x92 (W21 x62)			64	34	274,000	315,000	294,500	0.124
051 250-4760	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W530 x150 (W21 x101)			64	34	237,000	273,000	255,000	0.143
051 250-4780	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W530 x182 (W21 x122)			64	34	236,000	271,000	253,500	0.144
051 250-4900	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W610 x82 (W24 x55)			64	34	282,000	324,000	303,000	0.121
051 250-5700	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W610 x125 (W24 x84)			64	34	251,000	289,000	270,000	0.135
051 250-5740	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W610 x155 (W24 x104)			64	34	234,000	269,000	251,500	0.145
051 250-5780	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W610 x217 (W24 x146)			64	34	220,000	253,000	236,500	0.155
051 250-5800	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W690 x125 (W27 x84)			64	34	251,000	289,000	270,000	0.135
051 250-5820	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W690 x170 (W27 x114)			64	34	241,000	277,000	259,000	0.141
051 250-5960	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W690 x240 (W27 x161)	LM	1.00 Steel Foreman 5.00 Steel Workers 1.00 Welder 1.00 Crane Operator 1.00 Mobile Crane 1.00 Drill 1 HP 1.00 Welding MIG 1.00 Arc Torch Set 0.25 Hydraulic Jacks Set of 2	64	34	212,000	244,000	228,000	0.180
051 250-6100	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W760 x147 (W30 x99)			64	34	238,000	274,000	256,000	0.143
051 250-6500	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W760 x173 (W30 x118)			64	34	240,000	276,000	258,000	0.142
051 250-6540	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W760 x220 (W30 x148)			64	34	218,000	252,000	235,500	0.155
051 250-6580	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W760 x264 (W30 x191)			64	34	196,000	225,000	210,500	0.173
051 250-6700	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W840 x176 (W33 x118)			64	34	238,000	274,000	256,000	0.143
051 250-7100	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W840 x210 (W33 x141)			64	34	223,000	256,000	239,500	0.152
051 250-7140	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W840 x299 (W33 x201)			64	34	192,000	221,000	206,500	0.177
051 250-7300	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W920 x201 (W36 x135)			64	34	227,000	261,000	244,000	0.150
051 250-7600	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W920 x253 (W36 x170)			64	34	207,000	238,000	222,500	0.164
051 250-7900	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W920 x342 (W36 x230)			64	34	189,000	217,000	203,000	0.180
051 250-8100	Structural steel members common WF sizes, spans 3 m to 15 m including bolted connections and erection W920 x446 (W36 x300)			64	34	165,000	190,000	177,500	0.206
051 255	<b>STRUCTURAL STEEL PROJECTS: Bolted, unless mentioned otherwise:</b>								
051 255-0700	Offices, hospitals, etc., steel bearing 1 to 2 stories	TON	2.00 Steel Foreman 5.00 Steel Workers 2.00 Steel Welders 0.50 Crane Operator 0.50 Mobile Crane 3.00 Welding Machines 1.00 Air Compressor 0.125 Set Hydraulic Jacks 1.000 Power Tool 1.000 Tools Set	76	53	5,810	7,000	6,405	9.122



**DIVISION 05 : METALS**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN.	D. O. MAX.	D. O. AVRG	AVRG. E.H
051 255-0800	Offices,hospitals,etc.,steel bearing, 3 to 6 stories		3.00 Steel Foreman 9.00 Steel Workers 4.00 Steel Welders 1.00 Crane Operator 1.00 Mobile Crane 4.00 Welding Machines 1.00 Air Compressor 0.125 Set Hydraulic Jacks 2.000 Power Tools 1.000 Tools Set	136	73	10.250	12.000	11.125	7.122
051 255-0900	Offices,hospitals,etc.,steel bearing, 7 to 15 stories			136	73	9.150	11.000	10.075	7.878
051 255-1300	Industrial buildings,1 storey,beam & girders,steel bearing		2.00 Steel Foreman 9.00 Steel Workers 2.00 Steel Welders 2.50 Crane Operator 0.50 Mobile Crane 3.00 Welding Machines 1.00 Air Compressor 0.125 Set Hydraulic Jacks 1.000 Power Tools 1.000 Tools Set	75	53	7.100	6.000	7.550	7.455
051 255-1400	Industrial buildings,1 storey,beam & girders,masonry bearing			75	53	5.400	6.000	5.700	9.815
051 255-1600	Industrial buildings,1 story with roof trusses, steel bearing			75	53	5.900	7.000	6.450	8.983
051 255-3100	Roof trusses, average			75	53	4.800	6.000	5.400	11.042
051 255-3400	Welded construction,simple commercial bldgs.,1 to 2 stories			75	53	5.000	6.000	5.500	13.600
051 255-4300	Column base plates, light	KG	2.00 Skilled Workers 2.00 Tool Set	16	16	700.000	805.000	752.500	0.023
051 255-4400	Column base plates,heavy	KG	0.50 Steel Foreman 2.00 Steel Workers 1.00 Steel Welder 1.00 Crane Operator 1.00 Mobile Crane 1.00 Welding Machine	36	10	5000.000	5750.000	5375.000	0.003
051 255-4900	Castellated beams,heavy sections, to 75 kg/m, average	KG		36	10	5000.000	5750.000	5375.000	0.003
051 255-5200	High strength bolts in place,light reaming,19 mm bolts,average	EA	2.00 Skilled Workers 2.00 Tool Set	16	16	140.000	161.000	150.500	0.114
051 255-5300	High strength bolts in place,light reaming, 22 mm bolts,average			16	16	125.000	144.000	134.500	0.128
051 255-6170	Steel surface treatments, wire brush,hand	SQM	1.00 Painter,Struc.Steel 1.00 Consumable Tools	8	8	45.000	52.000	48.500	0.178
051 255-6180	Steel surface treatments, wire brush,power tool			8	8	48.000	55.000	51.500	0.167
051 255-6520	Paints & protective coatings,sprayed Alkyds,primer		2.00 Painters,Struc.Steel 1.00 Paint Sprayer & Lin.	16	8	250.000	288.000	269.000	0.032
051 255-6540	Paints & protective coatings,sprayed gloss topcoats			16	8	225.000	259.000	242.000	0.036
051 255-6560	Paints & protective coatings,sprayed Silicon alkyls			16	8	225.000	259.000	242.000	0.036
051 255-6610	Paints & protective coatings,sprayed epoxy,primer	SQM	2.00 Painters,Struc.Steel 1.00 Paint Sprayer & Lin.	16	8	210.000	242.000	226.000	0.038
051 255-6650	Paints & protective coatings,sprayed enamel coat			16	8	200.000	230.000	215.000	0.040
051 255-6810	Paints & protective coatings,sprayed latex primer			16	8	250.000	288.000	269.000	0.032
051 255-6830	Paints & protective coatings,sprayed latex primer top coats			16	8	225.000	258.000	242.000	0.036
051 255-0700	Paints & protective coatings,zinc rich primers, self cure,spray,inorganic			16	8	140.000	161.000	150.500	0.057
<b>051 275 VIBRATION PADS:</b>									
051 275-0300	Laminated synthetic rubber impregnated cotton duck	CUM	2.00 Skilled Workers 2.00 Tools Set	16	16	0.040	0.05	0.045	400.000
051 275-0600	Neoprene bearing pads,13 mm thick	SQM		16	16	1.750	2.000	1.875	9.143
051 275-0700	Neoprene bearing pads, 25 mm thick			16	16	1.400	2.000	1.700	11.429
051 275-1000	Neoprene bearing pads,fabric reinforced, 35 Mpa, 25 mm thick			16	16	1.400	2.000	1.700	11.429
051 275-1200	Felt surfaced vinyl pads, cork and sisal, 25 mm thick			16	16	1.400	2.000	1.700	11.429
<b>051 400 STRUCTURAL ALUMINIUM:</b>									
<b>051 404 ALUMINIUM:</b>									
051 404-0100	ALUMINIUM structural shapes, 25 mm to 250 mm,over 5 metric ton	KG	1.00 Steel Foreman 4.00 Steel Workers 1.00 Crane Operator 1.00 Mobile Crane	40	8	440.000	506.000	473.000	0.018
051 404-0300	ALUMINIUM Extrusions over 5 metric tons			48	8	440.000	506.000	473.000	0.018
<b>052 METAL JOISTS</b>									
<b>052 100 STEEL JOISTS:</b>									
<b>052 108 LIGHTGAUGE JOISTS:</b>									
052 108-0010	Lightgauge Joists,Punched,double nailable, 250 mm deep,14 ga.to 12 ga	LM	0.125 Steel Foreman 1.00 Steel Workers 2.00 Common Laborer 1.00 Power Tool	25	8	225.000	259.000	242.000	0.036
052 108-0800	Lightgauge Joists,Punched,double nailable, 310 mm deep,14 ga.to 12 ga			25	8	200.000	230.000	215.000	0.040
<b>052 110 OPEN WEB JOISTS:</b>									
052 110-0010	Open web joists K series,horizontal bridging,span up to 10 m,average	TON	2.00 Steel Foreman 4.00 Steel Workers 2.00 Steel Welder 1.00 Crane Operator 1.00 Mobile Crane 2.00 Welding Machine 2.00 Power Tools	72	40	6.500	7.000	6.750	6.154
052 110-0410	Open web joists K series,horizontal bridging,span 10 m to 15 m,average			72	40	7.000	8.000		6.111
052 110-2000	Open web joists LH series,bolted cross bridging,span up to 30 m			72	40	7.500	9.000	8.250	6.250
052 110-5500	Open web joists K series,welded cross bridging,span up to 10 m,average			72	40	5.500	6.000	5.750	6.274
052 110-6000	Open web joists K series,welded cross bridging,span up to 10 m to 15 m,average			72	40	12.000	14.000	13.000	3.333
052 110-7000	Joist girders,average			72	40	9.000	10.000	9.500	4.444



**DIVISION 05 : METALS**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E.H.
<b>053</b>	<b>METAL DECKING</b>								
<b>053 100</b>	<b>STEEL DECK:</b>								
<b>053 104</b>	<b>METAL DECKING:</b>								
053 104-0200	Metal Decking Steel floor panels,over 1500 m2 Cellular units galvanized, 51 mm deep, 20-20 gauge(2")	SCM	1.00 Steel Foreman 3.000 Steel Welder 1.000 Welder 1.000 Welding Machine	40	8	115.000	132.000	123.500	0.070
053 104-0300	Metal Decking Steel floor panels,over 1500 m2 Cellular units galvanized, 51 mm deep, 16-16 gauge			40	8	110.000	127.000	118.500	0.073
053 104-0320	Metal Decking Steel floor panels,over 1500 m2 Cellular units galvanized, 51 mm deep, 16-16 gauge			40	8	105.000	121.000	113.000	0.076
053 104-0400	Metal Decking Steel floor panels,over 1500 m2 Cellular units galvanized, 76 mm deep, 20-20 gauge(3")			40	8	110.000	127.000	118.500	0.073
053 104-0700	Metal Decking Steel floor panels,over 1500 m2 Cellular units galvanized, 76 mm deep, 16-16 gauge			40	8	95.000	109.000	102.000	0.084
053 104-2200	Metal Decking Steel floor panels,open type,galv. 38 mm deep, 22 ga.,under 450 - 4500 m2			40	8	345.000	397.000	371.000	0.023
053 104-2400	Metal Decking Steel floor panels,open type,galv. 38mm deep,22 ga.,over 4500 m2			40	8	365.000	420.000	392.500	0.022
053 104-3060	Metal Decking Steel floor panels,open type,galv. 38mm deep,16 ga.,under 450 - 4500 m2			40	8	295.000	339.000	317.000	0.027
053 104-3100	Metal Decking Steel floor panels,open type,galv. 38 mm deep,16 ga.,over 4500 m2			40	8	240.000	276.000	258.000	0.033
053 104-3560	Metal Decking Steel floor panels,open type,galv. 76 mm deep,16 ga.,over 4500 m2			40	8	190.000	219.000	204.500	0.042
053 104-3900	Metal Decking Steel floor panels,open type,galv. 114 mm deep,long span roof,16 gauge,over 450 m2			40	8	145.000	167.000	156.000	0.055
053 104-4100	Metal Decking Steel floor panels,open type,galv. 152 mm deep,long span,16 gauge,(6")			40	8	135.000	155.000	145.000	0.059
053 104-4300	Metal Decking Steel floor panels,open type,galv. 152 mm deep,long span,14 gauge			40	8	125.000	144.000	134.500	0.064
053 104-4500	Metal Decking Steel floor panels,open type,galv. 191 mm deep,long span,16 gauge(7-1/2")	SCM	1.00 Steel Foreman 3.000 Steel Welder 1.000 Welder 1.000 Welding Machine	40	8	260.000	299.000	279.500	0.031
053 104-5200	Metal Decking Steel floor panels, Non-cellular composite deck,galv., 51 mm deep,22 gauge(2")			40	8	280.000	322.000	301.000	0.029
053 104-5400	Metal Decking Steel floor panels, Non-cellular composite deck,galv., 51 mm deep,16 gauge(2")			40	8	245.000	282.000	263.500	0.033
053 104-5500	Metal Decking Steel floor panels, Non-cellular composite deck,galv., 51 mm deep,16 gauge			40	8	230.000	265.000	247.500	0.035
053 104-5700	Metal Decking Steel floor panels, Non-cellular composite deck,galv., 76 mm deep,22 gauge(3")			40	8	230.000	265.000	247.500	0.035
053 104-5900	Metal Decking Steel floor panels, Non-cellular composite deck,galv., 76 mm deep,16 gauge(3")			40	8	210.000	242.000	226.000	0.038
053 104-6000	Metal Decking Steel floor panels, Non-cellular composite deck,galv., 76 mm deep,16 gauge(3")			40	8	190.000	219.000	204.500	0.042
<b>055</b>	<b>METAL FABRICATION</b>								
<b>055 100</b>	<b>METAL STAIRS:</b>								
<b>055 104</b>	<b>STAIRS:</b>								
055 104-0100	Stair Steel,1.2 m wide including safety nosing,steel tube stringers, Grating tread and pipe railing	RISER	1.00 Steel Foreman 3.000 Steel Welder 1.000 Welder 1.000 Welding Machine	40	8	25.000	29.000	27.000	0.320
055 104-0300	Stair Steel,1.2 m wide,including safety nosing,steel tube stringers, Cement fill metal pan and picket rail			40	8	25.000	29.000	27.000	0.320
055 104-0400	Stair Steel,1.2 m wide, including safety nosing,steel tube stringers, Cast iron tread and pipe rail			40	8	30.000	35.000	32.500	0.267
055 104-0500	Stair Steel,1.1 m wide,including safety nosing,steel tube stringers, Checkered plate tread,industrial			40	8	25.000	29.000	27.000	0.320
055 104-0550	Stair Steel,0.91 m wide,including safety nosing,steel tube stringers, Checkered plate tread,circular for tanks			40	8	25.000	29.000	27.000	0.320
055 104-0600	Stair Steel,1.2 m wide, free standing, including safety nosing,steel tube stringers,grating treads and two pipe railing			40	8	15.000	17.000	16.000	0.533
055 104-1500	Stair Steel,Landing,steel pan,conventional	SCM		40	8	11.000	13.000	12.000	0.727
055 104-1830	Stair aluminium,spiral,1.2 m diameter,aluminium treads, stock prefabricated unit.	RISER		40	8	40.000	46.000	43.000	0.200
<b>055 108</b>	<b>STAIR TREADS:</b>								
055 108-0100	Stair Treads Alum.grating 910 mm long, 25 x 5 mm bars, 310 mm wide	EA	1.00 Skilled Worker	8	0	16.000	18.000	17.000	0.000
055 108-0300	Stair Treads Alum.grating 910 mm long, 38 x 5 mm bars, 310 mm wide			8	0	16.000	18.000	17.000	0.000
055 108-0800	Stair Treads cast Aluminium, 1.1 m long, 310 mm wide, 10 mm thick			8	0	11.000	13.000	12.000	0.000
055 108-2010	Stair Treads Steel grating, 1.1 m long, 310 mm wide			8	0	10.000	12.000	11.000	0.000
<b>055 150</b>	<b>LADDERS:</b>								
<b>055 158</b>	<b>LADDER:</b>								
055 158-0010	Ladder,steel or aluminium,bolted to concrete,with cage	LM	1.00 Steel Foreman 3.000 Steel Welder 1.000 Welder 1.000 Welding Machine	40	8	13.000	15.000	14.000	0.615
055 158-0400	Ladder steel or aluminium,bolted to concrete without cage			40	8	20.000	23.000	21.500	0.400
<b>055 200</b>	<b>HANDRAILS &amp; RAILINGS:</b>								
<b>055 202</b>	<b>BUMPER RAILS:</b>								
055 202-0010	Bumper rails for garages, 12 ga.rail, 152 mm wide,with steel posts 3.8 mm O.C., average	LM	1.00 Steel Foreman 3.000 Steel Welder 1.000 Welder 1.000 Welding Machine	40	8	44.000	51.000	47.500	0.182
055 202-0300	Bumper rails for garages, 12 ga.,310 mm channel rail average			40	8	38.000	44.000	41.000	0.211
<b>055 203</b>	<b>RAILING,PIPE:</b>								



**DIVISION 05 : METALS**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E.H.
055 203-0010	Railing,Pipe Aluminum, 2 rail, 32 or 38 mm diam	LM	1.00 Steel Foreman 3.000 Steel Welder 1.000 Welder 1.000 Welding Machine	40	B	42.000	48.000	45.000	0.190
055 203-0500	Railing,Pipe Steel 2 rail,primed, 32 or 38 mm diameter			40	B	42.000	48.000	45.000	0.190
055 203-0640	Railing,Pipe Steel, 3 rail, 38 mm diameter			40	B	36.000	41.000	38.500	0.222
055 203-0700	Railing,Pipe Stainless Steel 2 rail, 32 mm diameter			40	A	36.000	41.000	38.500	0.222
055 203-0900	Wall rail,alum. or steel pipe, 32 or 38 mm diam.,for handicapped			40	B	60.000	69.000	64.500	0.133
055 203-0995	Wall rail, stainless steel pipe, 38 mm diam., for handicapped			40	B	30.000	35.000	32.500	0.267
<b>055 206</b>	<b>RAILINGS,INDUSTRIAL:</b>								
055 206-0010	Railings,industrial welded, 2 rail,1.1 m high, 50 mm Angle rail	LM	1.00 Steel Foreman 3.000 Steel Welder 1.000 Welder 1.000 Welding Machine	40	B	60.000	69.000	64.500	0.133
055 206-0500	Railings,industrial welded, 2 rail,1.1 m high, 38 mm pipe curved rails			40	B	42.000	48.000	45.000	0.190
<b>055 208</b>	<b>RAILINGS,ORNAMENTAL:</b>								
055 208-0010	Railings,Ornamental Aluminum,bronze or stainless,average	LM	1.00 Skilled Worker 1.00 Power Tool	8	B	4.000	5.000	4.500	2.000
055 208-0400	Railings,Ornamental Hand-forged wrought iron,average			8	B	3.000	3.000	3.000	2.667
055 208-0600	Railings,Ornamental Composite metal and wood or glass,average	LM	1.00 Skilled Worker 1.00 Power Tool	8	B	1.000	1.000	1.000	6.000
<b>055 300</b>	<b>GRATINGS &amp; FLOOR PLATES:</b>								
<b>055 302</b>	<b>CHECKERED PLATE:</b>								
055 302-0010	Checkered plate 6 mm & 10 mm, bolted	KG	1.00 Steel Foreman 3.000 Steel Welder 1.000 Welder 1.000 Welding Machine	40	B	1150.000	1323.000	1236.500	0.007
055 302-0100	Checkered plate 6 mm & 10 mm, welded			40	B	1750.000	2013.000	1881.500	0.005
055 302-0300	Checkered plate pit or trench cover and frame, 6 mm plate, 610 mm to 910 mm wide	SQM		40	B	8.000	9.000	8.500	1.000
055 302-0500	Checkered plate platforms,rectangular, 6 mm plate, no handrails included	KG		40	B	1650.000	1898.000	1774.000	0.005
055 302-0600	Checkered plate platforms,circular, 6 mm plate, no handrails included			40	B	950.000	1093.000	1021.500	0.008
<b>055 304</b>	<b>FLOOR GRATING,ALUMINIUM:</b>								
055 304-1600	Floor Grating, Aluminium,Heavy duty,all extruded panels,19 mm deep, 8.2 kg/m2	SQM	1.00 Steel Foreman 3.000 Steel Welder 1.000 Welder 1.000 Welding Machine	40	B	85.000	98.000	91.500	0.094
055 304-1800	Floor Grating, Aluminium,Heavy duty,all extruded panels, 44 mm deep, 23.1 kg/m2			40	B	70.000	81.000	75.500	0.114
055 304-2400	Floor Grating, close spaced aluminium grating with vinyl tread inserts			40	B	20.000	23.000	21.500	0.400
<b>055 308</b>	<b>FLOOR GRATING,FIBERGLASS:</b>								
055 308-0200	Floor grating,fiberglass reinforced polyester,fire retardant 25 mm x 100 mm grid, 38 mm thick	SQM	1.00 Steel Foreman 3.000 Steel Welder 1.000 Welder 1.000 Welding Machine	40	B	40.000	46.000	43.000	0.200
<b>055 310</b>	<b>FLOOR GRATING PLANKS:</b>								
055 310-0010	Floor Grating Planks ALUMINIUM, 240 mm wide 14 ga., 50 mm rib	LM	1.00 Steel Foreman 3.000 Steel Welder 1.000 Welder 1.000 Welding Machine	40	B	245.000	282.000	263.500	0.033
055 310-0600	Floor Grating Planks Galvanized steel, 240 mm wide 12 ga., 76 mm rib			40	B	245.000	282.000	263.500	0.033
055 310-0800	Floor Grating Planks stainless steel type 304 or 316,16 ga., 50 mm rib			40	B	245.000	282.000	263.500	0.033
<b>055 312</b>	<b>FLOOR GRATING STEEL:</b>								
055 312-0010	Floor Grating,Steel for installing on grade	SQM	1.00 Steel Foreman 3.000 Steel Welder 1.000 Welder 1.000 Welding Machine	40	B	65.000	75.000	70.000	0.123
055 312-0300	Floor Grating,platforms, to 3.7 m high,rectangular	KG		40	B	1200.000	1380.000	1290.000	0.007
055 312-0400	Floor Grating,platforms, to 3.7 m high,circular			40	B	850.000	978.000	914.000	0.009
055 312-2000	Floor Grating,Stainless Steel close spaced,on grade	SQM		40	B	25.000	29.000	27.000	0.320
055 312-2100	Floor Grating,Stainless steel,standard, 15.9 kg/m2			40	B	65.000	75.000	70.000	0.123
055 312-2650	Floor Grating,Expanded steel, 20 kg/m2			40	B	65.000	75.000	70.000	0.123
<b>055 314</b>	<b>GRATING FRAME:</b>								
055 314-0010	Grating frame Aluminium,for gratings 25 mm to 40 mm deep	LM	1.00 Skilled Labour 1.00 Power Tool	8	B	15.000	17.000	16.000	0.533
055 314-0100	Grating frame ALUMINIUM corner, for gratings 25 mm to 40 mm deep	EA		8	B	11.000	13.000	12.000	0.727
<b>055 370</b>	<b>TRENCH COVER:</b>								
055 370-0020	Trench cover cast iron grating with bar stops and angle frame to 460 mm wide	LM	1.00 Skilled Labour 1.00 Power Tool	8	B	5.000	6.000	5.500	1.600
055 370-0100	Trench cover frame only (both sides of trench), 25 mm grating			8	B	12.000	14.000	13.000	0.667
055 370-0150	Trench cover frame only (both sides of trench), 50 mm grating			8	B	8.000	9.000	8.500	1.000
<b>055 400</b>	<b>CASTINGS</b>								
<b>055 404</b>	<b>CONSTRUCTION CASTINGS:</b>								
055 404-0020	Manhole covers and frames see div., 027-152			8					
055 404-0100	Column bases,cast iron, 410 mm x 410 mm, approx. 30 kg	EA	1.00 Steel Foreman 3.000 Steel Welder 1.000 Welder 1.000 Welding Machine	40	B	40.000	46.000	43.000	0.200
055 404-0200	Column bases,cast iron, 815 mm x 815 mm, approx. 115 kg			40	B	18.000	21.000	19.500	0.444
055 404-0500	Column bases,cast aluminium for wood columns 310 mm x 310 mm		1.00 Skilled Labour 1.00 Power Tool	8	B	25.000	29.000	27.000	0.320



**DIVISION 05 : METALS**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN.	D. O. MAX.	D. O. AVRG	AVRG. E.H.
055 404-0500	Miscellaneous C.I. castings, light sections	KG	1.00 Steel Foreman 3.000 Steel Welder 1.000 Welder 1.000 Welding Machine	40	B	1150.000	1323.000	1236.500	0.007
055 404-1100	Miscellaneous C.I. castings, Heavy sections	..		40	B	1600.000	1840.000	1720.000	0.005
<b>055 500</b>	<b>METAL SPECIALTIES</b>								
<b>055 504</b>	<b>LAMP POSTS:</b>								
055 504-0010	Lamp Posts, 2.15 m high, aluminium or mild steel	EA	1.00 Skilled Labour 1.00 Power Tools	B	B	12.000	14.000	13.000	0.667
<b>055 508</b>	<b>WINDOW GUARDS:</b>								
055 508-0020	Window guard, Permanent, expanded metal, steel angle frame, steel bars, 13 mm x 13 mm, spaced 130 mm O.C.	SQM	1.00 Steel Foreman 3.000 Steel Welder 1.000 Welder 1.000 Welding Machine	40	B	24.000	28.000	26.000	0.333
055 508-0070	Window guard, steel, Pivoted or projected, including steel angle frame, steel bars 13 mm x 13 mm, spaced, 130 mm O.C.			40	B	15.000	17.000	16.000	0.533
055 508-0500	Window Guards, Woven wire units, 10 mm chan. frame, 1.2 m x 1.8 m opening.			40	B	30.000	35.000	32.500	0.267
<b>058</b>	<b>EXPANSION CONTROL</b>								
<b>058 100</b>	<b>EXP. COVER ASSEMBLIES:</b>								
<b>058 104</b>	<b>EXPANSION JOINT ASSEMBLIES Custom Units:</b>								
058 104-0500	Floor cover assemblies, up to 50 mm space, aluminium, bronze or stainless	LM	1.00 Skilled Labour 1.00 Power Tools	B	B	9.000	10.000	9.500	0.889
058 104-1100	Wall and ceiling assemblies, up to 50 mm space, aluminium, bronze or stainless			B	B	9.000	10.000	9.500	0.889
058 104-1400	Floor to wall assemblies, 25 mm space, aluminium, bronze or stainless			B	B	9.000	10.000	9.500	0.889
058 104-1700	Gym floor angle covers, aluminium, 76 mm x 76 mm or 76 mm x 100 mm angle.			B	B	11.000	13.000	12.000	0.727
058 104-2000	Roof closures, aluminium, 25 mm space, flat roof			B	B	13.000	15.000	14.000	0.615
058 104-2300	Roof closures, Roof to wall, aluminium, 25 mm space			B	B	13.000	15.000	14.000	0.615





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# Division 6

## Wood & Plastics

## **Division 6.. Wood & Plastics..**

### **Estimating Tips:**

#### **060 Fasteners & Adhesives:**

Common to any wood framed structure are the accessory connector items such as screws, nails, adhesives, hangers, connector plates, straps, and angles that should be taken off by the piece.

Nails requirement for wood structures varies with various kinds of lumber, estimator shall be aware of element needs for nails quality and types.

#### **061 Rough Carpentry:**

Lumber is a traded commodity and therefore sensitive to supply and demand in the market place. It is advisable to call local suppliers for the latest market pricing.

Waste is an issue of concern at the quantity taken off for any area of construction.

The estimator should ensure that the costs of all wood materials are included in the final estimate.

Modern tools, such as electric drills, sanders, electric hand saws play a major part in reducing labor costs and speed productivity.

#### **062 Finish Carpentry:**

It is necessary to consider the grade of work-manship when estimating labor costs for erecting millwork and interior finish. It is important to notify that finish carpentry is not only shown in this division as per CSI format. Finish carpentry is spread in other four (4) divisions detailed as follows:

Wood siding is detailed in Div. 7 Doors & Windows are detailed in Div. 8 Specialties Div 10 includes tackboards, toilets partitions, folding partitions, bolts, etc.. While Div 11 includes wood cabinets and shelving. Div 12 deals with wood furnishings, seating, etc..



**DIVISION 06 : WOOD & PLASTICS**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
<b>061 ROUGH CARPENTRY</b>									
<b>061 100 WOOD FRAMING</b>									
<b>061 128 FRAMING, WALLS:</b>									
061 128-6120	Framing walls, wood studs, 2450 mm high wall, 50 mm x 75 mm	DUM	0.125 Labor Foreman 2.000 Carpenters 1.000 Common Laborer 1.000 Power Tools	25	8	1.302	1.500	1.401	6.144
061 128-6125	Framing walls, wood studs, 2450 mm high wall, 50 mm x 75 mm, pneumatic nailed		0.125 Labor Foreman 2.000 Carpenters 1.000 Common Laborer 1.000 Small Compressor w/ 2 Pneumatic Nailer 1.000 Power Tools	25	16	1.449	2.000	1.725	11.042
061 128-6140	Framing walls, wood studs, 2450 mm high wall, 50 mm x 100 mm		0.125 Labor Foreman 2.000 Carpenters 1.000 Common Laborer 1.000 Power Tools	25	8	1.736	2.000	1.866	4.606
061 128-6145	Framing walls, wood studs, 2450 mm high wall, 50 mm x 100 mm, pneumatic nailed		0.125 Labor Foreman 2.000 Carpenters 1.000 Common Laborer 1.000 Small Compressor w/ 2 Pneumatic Nailer 1.000 Power Tools	25	16	1.933	2.000	1.967	8.277
061 128-6160	Framing walls, wood studs, 2450 mm high wall, 50 mm x 150 mm		0.125 Labor Foreman 2.000 Carpenters 1.000 Common Laborer 1.000 Power Tools	25	8	2.161	2.500	2.331	3.702
061 128-6160	Framing walls, wood studs, 2450 mm high wall, 50 mm x 150 mm, pneumatic nailed		0.125 Labor Foreman 2.000 Carpenters 1.000 Common Laborer 1.000 Small Compressor w/ 2 Pneumatic Nailer 1.000 Power Tools	25	16	2.406	3.000	2.703	6.650
061 128-6180	Framing walls, wood studs, 2450 mm high wall, 75 mm x 100 mm		0.125 Labor Foreman 2.000 Carpenters 1.000 Common Laborer 1.000 Power Tools	25	8	1.731	2.000	1.866	4.622
061 128-6185	Framing walls, wood studs, 2450 mm high wall, 75 mm x 100 mm, pneumatic nailed		0.125 Labor Foreman 2.000 Carpenters 1.000 Common Laborer 1.000 Small Compressor w/ 2 Pneumatic Nailer 1.000 Power Tools	25	16	1.995	2.500	2.248	8.020
061 128-8200	Framing stud wall, 3850 mm high wall, 50 x 100mm pneumatic nailed			25	16	1.866	2.000	1.933	8.574
061 128-8220	Framing stud wall, 1825 mm high, 50 x 100mm, pneumatic nailed			25	16	1.389	2.000	1.695	11.519
061 128-8240	Framing stud wall, stub wall, 925 mm high, 50 x 100mm			25	16	1.042	1.500	1.271	15.355
061 128-8250	Framing stud wall, second story 2450 mm high, 50 x 100mm			25	16	1.649	2.000	1.825	9.703
<b>061 130 FURRING:</b>									
061 130-0010	Furring Wood strips, 25 mm x 50 mm, on wood walls, pneumatic, nailed	LM	0.125 Labor Foreman 1.000 Carpenters 1.000 Common Laborer 1.000 Small Compressor w/ 2 Pneumatic Nailer 1.000 Power Tools	17	16	270.000	311.000	290.500	0.059
061 130-0300	Furring Wood strips, 25 mm x 50 mm, on masonry walls, nails driven in joints		0.125 Labor Foreman 1.000 Carpenter 1.000 Common Laborer 1.000 Power Tools	17	8	185.000	213.000	199.000	0.043
061 130-0400	Furring Wood strips, 25 mm x 50 mm, on concrete walls nailed in wood plugs			17	8	85.000	98.000	91.500	0.094
061 130-0600	Furring Wood strips, 25 mm x 75 mm, nailed on wood walls			17	8	210.000	242.000	226.000	0.038
061 130-0700	Furring Wood strips, 25 mm x 75 mm, on masonry walls, nailed in wood plugs			17	8	90.000	104.000	97.000	0.089
061 130-0800	Furring Wood strips, 25 mm x 75 mm, on concrete walls			17	8	85.000	98.000	91.500	0.094
061 130-0850	Furring Wood strips, 25 mm x 75 mm, on wood ceilings			17	8	125.000	144.000	134.500	0.064
061 130-0950	Furring Wood strips, 25 mm x 75 mm, on concrete ceilings			17	8	68.000	78.000	73.000	0.118
<b>061 132 GROUNDS: (A piece of wood for attachment)</b>									
061 132-0400	Grounds for plaster, 20 mm deep on masonry	LM	0.125 Labor Foreman 1.000 Carpenter 1.000 Common Laborer 1.000 Power Tools	17	8	100.000	115.000	107.500	0.080
061 132-0600	Grounds for plaster, 20 mm deep on concrete			17	8	85.000	75.000	70.000	0.123
061 132-0700	Grounds for plaster, 20 mm deep on metal lath			17	8	80.000	92.000	86.000	0.100
<b>061 134 INSULATION See Division 072</b>									
<b>061 138 PARTITIONS: Wood stud with single bottom plate and double top plate</b>									
061 138-0180	Partitions, wood stud with bottom plate & double top plate, 50 mm x 100 mm, 2.45 m high, stud 300 mm O.C.	LM	0.125 Labor Foreman 1.000 Carpenters 1.000 Common Laborer 1.000 Power Tools	25	8	21.698	25.000	23.349	0.369
061 138-0200	Partitions, wood stud with bottom plate & double top plate, 50 mm x 100 mm, 2.45 m high, stud 400 mm O.C.			25	8	24.375	28.000	26.168	0.326
061 138-0380	Partitions, wood stud with bottom plate & double top plate, 50 mm x 100 mm, 3 m high, stud 300 mm O.C.	LM	0.125 Labor Foreman 1.000 Carpenters 1.000 Common Laborer 1.000 Power Tools	25	8	20.509	24.000	22.255	0.390
061 138-0400	Partitions, wood stud with bottom plate & double top plate, 50 mm x 100 mm, 3 m high, stud 400 mm O.C.			25	8	23.259	27.000	25.130	0.344

# **DIVISION 06 : WOOD & PLASTICS**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
061 138-0580	Partitions, wood stud with bottom plate & double top plate, 50 mm x 100 mm, 3.65 m high, stud 300 mm O.C.			25	8	17.619	20.000	18.810	0.454
061 138-0600	Partitions, wood stud with bottom plate & double top plate, 50 mm x 100 mm, 3.65 m high, stud 400 mm O.C.			25	8	20.333	23.000	21.667	0.393
061 138-0780	Partitions, wood stud with bottom plate & double top plate, 50 mm x 150 mm, 2.45 m high, stud 300 mm O.C.			25	8	19.144	22.000	20.572	0.415
061 138-0800	Partitions, wood stud with bottom plate & double top plate, 50 mm x 150 mm, 2.45 m high, stud 400 mm O.C.			25	8	21.533	25.000	23.267	0.372
061 138-0950	Partitions, wood stud with bottom plate & double top plate, 50 mm x 150 mm, 3 m high, stud 300 mm O.C.			25	8	18.873	22.000	20.467	0.422
061 138-1000	Partitions, wood stud with bottom plate & double top plate, 50 mm x 150 mm, 3 m high, stud 400 mm O.C.			25	8	21.374	25.000	23.187	0.374
061 138-1180	Partitions, wood stud with bottom plate & double top plate, 50 mm x 150 mm, 3.65 m high, stud 300 mm O.C.			25	8	15.553	18.000	16.777	0.514
061 138-1200	Partitions, wood stud with bottom plate & double top plate, 50 mm x 150 mm, 3.65 m high, stud 400 mm O.C., pneumatic nailed		0.125 Labor Foreman 2.000 Carpenters 1.000 Common Laborer 1.000 Small Compressor w/2 Pneumatic Nailer 1.000 Power Tools	25	16	18.653	21.000	19.832	0.857
061 138-1400	Horizontal blocking 50x100 mm added to stud wall		0.125 Labor Foreman 2.000 Carpenters 1.000 Common Laborer 1.000 Power Tools	25	8	200.000	230.000	215.000	0.040
<b>061 150</b>	<b>SHEATHING:</b>								
061 154-0030	Plywood on roof, C&D, exterior glued, "CDX", 8 mm thick	SQM	0.125 Labor Foreman 2.000 Carpenters 1.000 Common Laborer 1.000 Power Tools	25	8	156.400	182.000	170.200	0.051
061 154-0055	Plywood on roof, "CDX", 10 mm thick, pneumatic nailed		0.125 Labor Foreman 2.000 Carpenters 1.000 Common Laborer 1.000 Small Compressor w/2 Pneumatic Nailer 1.000 Power Tools	25	16	184.320	212.000	198.160	0.087
061 154-0305	Plywood on roof, "CDX", 20 mm thick, pneumatic nailed			25	16	168.920	195.000	182.460	0.094
061 154-0500	Plywood on stud walls with exterior "CDX", 10 mm thick		0.125 Labor Foreman 2.000 Carpenters 1.000 Common Laborer 1.000 Power Tools	25	8	123.840	142.000	132.920	0.065
061 154-0600	Plywood on stud walls with exterior CDX, 13 mm thick			26	8	118.080	136.000	127.040	0.068
061 154-0700	Plywood on stud walls with exterior CDX, 16 mm thick			28	8	109.440	126.000	117.720	0.073
061 154-0800	Plywood on stud walls with exterior CDX, 20 mm thick			28	8	97.920	113.000	105.460	0.082
061 154-2400	Sheathing Boards 25 mm x 150 mm on stud walls, laid regular, on straight regular walls			28	8	60.000	69.000	64.500	0.133
061 154-2500	Sheathing Boards 25 mm x 150 mm on stud walls, laid diagonal, on straight regular walls			28	8	52.500	60.000	56.250	0.152
061 154-2700	Sheathing Boards 25 mm x 200 mm on stud walls, laid regular, on straight regular walls			28	8	69.000	80.000	74.500	0.116
061 154-2800	Sheathing Boards 25 mm x 200 mm on stud walls, laid diagonal, on straight regular walls			28	8	57.750	66.000	61.875	0.139
061 154-2820	Sheathing Boards 25 mm x 150 mm on stud walls, laid regular, on irregular walls regular walls			26	8	48.000	55.000	51.500	0.167
061 154-2850	Board, gypsum, weatherproof, 13 mm thick, on stud wall, taped and finished, beads not included			26	8	100.000	115.000	107.500	0.080
061 154-3000	Board, wood fiber, regular, no vapor barrier, 13 mm thick on stud wall			26	8	105.000	121.000	113.000	0.076
061 154-3100	Board, wood fiber, regular, no vapor barrier, 16 mm thick on stud wall			26	8	105.000	121.000	113.000	0.076
061 154-3600	Board, wood fiber, Asphalt impregnated, 20 mm thick, on stud wall			28	8	105.000	121.000	113.000	0.076
<b>061 160</b>	<b>SUBFLOOR:</b>								
061 160-0105	Subfloor, plywood, CDX, 16 mm thick, pneumatic nailed, blocking not included	SQM Ft	0.125 Labor Foreman 2.000 Carpenters 1.000 Common Laborer 1.000 Small Compressor w/2 Pneumatic Nailer 1.000 Power Tools	25	16	178.560	205.000	191.780	0.090
061 160-0200	Subfloor, plywood CDX, 20 mm thick		0.125 Labor Foreman 2.000 Carpenters 1.000 Common Laborer 1.000 Power Tools	25	8	120.960	135.000	129.980	0.066
061 160-0205	Subfloor, plywood, CDX, 20 mm thick, pneumatic nailed to floor joists, no blocking		0.125 Labor Foreman 2.000 Carpenters 1.000 Common Laborer 1.000 Small Compressor w/2 Pneumatic Nailer 1.000 Power Tools	25	8	144.000	166.000	155.000	0.056
061 160-0210	Subfloor, plywood, CDX, 20 mm thick, pneumatic nailed to floor joists, and blocking pieces vertical to floor joists at 1.2 meter spacing	SQM Ft	0.125 Labor Foreman 2.000 Carpenters 1.000 Common Laborer 1.000 Small Compressor w/2 Pneumatic Nailer 1.000 Power Tools	25	8	74.880	86.000	80.440	0.107
061 160-1100	Subfloor, wood fiber tongue & groove, 800 x 2450 mm planks, 25 mm thick			25	8	96.000	110.000	103.000	0.093
<b>061 168</b>	<b>SUBFLOOR UNDERLAYMENT:</b>								
061 168-0015	Underlayment, plywood grade, 10 mm thick, pneumatic nailed	SQM Ft	0.125 Labor Foreman 2.000 Carpenters 1.000 Common Laborer 1.000 Small Compressor w/2 Pneumatic Nailer 1.000 Power Tools	25	16	184.320	212.000	198.160	0.087



# **DIVISION 06 : WOOD & PLASTICS**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
061 168-0200	Underlayment, plywood grade, 16 mm thick		0.125 Labor Foreman 2.000 Carpenters 1.000 Common Laborer 1.000 Power Tools	25	8	144.000	166.000	155.000	0.056
061 168-0205	Underlayment, plywood grade, 16 mm thick, pneumatic nailed		0.125 Labor Foreman 2.000 Carpenters 1.000 Common Laborer 1.000 Small Compressor w/2 Pneumatic Nailer 1.000 Power Tools	25	16	176.560	205.000	191.780	0.090
061 168-0600	Underlayment, particle board, 13 mm thick		0.125 Labor Foreman 2.000 Carpenters 1.000 Common Laborer 1.000 Power Tools	25	8	144.000	166.000	155.000	0.056
061 168-0900	Underlayment, particle board, 20 mm thick			25	8	135.000	155.000	145.000	0.059
061 168-0905	Underlayment, particle board, 20 mm thick, pneumatic nailed		0.125 Labor Foreman 2.000 Carpenters 1.000 Common Laborer 1.000 Small Compressor w/2 Pneumatic Nailer 1.000 Power Tools	25	16	161.280	185.000	173.140	0.099
061 168-1100	Underlayment, hardboard, 1225 mm x 1225 mm, 5 mm thick		0.125 Labor Foreman 2.000 Carpenters 1.000 Common Laborer 1.000 Power Tools	25	8	146.880	169.000	157.940	0.054
<b>061 250</b>	<b>WOOD DECKING</b>								
<b>061 258</b>	<b>ROOF DECKS:</b>								
061 258-0400	Roof decks, wood planks, 75 mm thick	SQM	0.125 Labor Foreman 2.000 Carpenters 1.000 Common Laborer 1.000 Power Tools	25	8	45.000	52.000	48.500	0.178
061 258-0500	Roof decks, wood planks, 100 mm thick	"		25	8	36.000	41.000	38.500	0.222
<b>061 259</b>	<b>DECK, WOOD, PRESSURE TREATED LUMBER:</b>								
061 259-0100	Pressure treated lumber railings and trim, 25 mm x 100 mm	LM	0.125 Labor Foreman 1.000 Carpenters 1.000 Common Laborer 1.000 Power Tools	16.125	8	100.000	115.000	107.500	0.080
061 259-0300	Pressure treated lumber railings and trim, 50 mm x 150 mm	"		16.125	8	100.000	115.000	107.500	0.080
061 259-0400	Pressure treated decking, 25 mm x 100 mm	SQM		16.125	8	22.500	26.000	24.250	0.356
061 259-0600	Pressure treated decking, 50 mm x 150 mm	"		16.125	8	27.000	31.000	29.000	0.296
<b>061 280</b>	<b>MINERAL FIBER CEMENT PANELS</b>								
<b>061 281</b>	<b>MINERAL FIBER CEMENT PANELS: Including panels, fasteners, accessories, trim &amp; sealant</b>								
061 280-0130	Mineral fiber cement panels, architectural, textured finish, 3 mm thru 10 mm thick	SQM	0.125 Labor Foreman 3.000 Skilled Workers 2.000 Common Laborers 2.000 Power Tools	41	16	60.000	69.000	64.500	0.267
061 280-0350	Mineral fiber cement panels, architectural, textured finish, 16 mm thick			41	16	38.000	44.000	41.000	0.421
061 280-2000	Mineral fiber cement panels, flat sheets 3 mm thick			41	16	144.000	166.000	155.000	0.111
061 280-2100	Mineral fiber cement panels, flat sheets 6 mm thick			41	16	124.000	143.000	133.500	0.129
061 280-2200	Mineral fiber cement panels, flat sheets 10 mm thick			41	16	105.000	121.000	113.000	0.152
061 280-2300	Mineral fiber cement panels, flat sheets 16 mm thick			41	16	96.000	110.000	103.000	0.167
061 280-4100	Mineral fiber cement, sandwich panel, glassfibre face and back 25 mm thick, perlite or polyurethane core			41	16	38.000	44.000	41.000	0.421
061 280-4500	Mineral fiber cement, sandwich panel, glassfibre face and back 50 mm thick, perlite, polyurethane core			41	16	38.000	44.000	41.000	0.421
<b>061 500</b>	<b>WOOD-METAL SYSTEMS</b>								
<b>061 508</b>	<b>STRUCTURAL JOISTS:</b>								
061 508-1200	Fabricated joists I (eye beam) shape with wood flanges, plywood webs, incl. bridging & blocking, panels 600 mm O.C., 4.6 m to 7.3 m span, 244 kg/m <sup>2</sup> live load	SQM Ft	0.125 Labor Foreman 2.000 Carpenters 3.000 Common Laborer 1.000 Power Tools	41	8	250.000	288.000	269.000	0.032
061 508-1500	Fabricated joists I (eye beam) shape with wood flanges, plywood webs, incl. bridging & blocking, panels 600 mm O.C., 7.3 m to 9.2 m span, 269 kg/m <sup>2</sup> live load	"		41	8	250.000	288.000	269.000	0.032
<b>061 800</b>	<b>GLUED LAMINATED CONST.</b>								
<b>061 804</b>	<b>LAMINATED FRAMING:</b>								
061 804-0200	Laminated roof beams, no decking, 13.6 kg. short term live load, 6.8 kg dead load, straight, 6 m clear span, 2.45 m O.C.	SQM Ft	0.500 Labor Foreman 4.000 Carpenters 1.000 Equip. Oper. (crane) 1.000 Phys. Crane, 11 Ton 2.000 Power Tools	44	24	70.000	81.000	75.500	0.343
061 804-0300	Laminated roof beams, no decking, 13.6 kg. short term live load, 6.8 kg dead load, straight, 6.1 m clear span, 4.8 m O.C.	"		44	24	55.000	63.000	59.000	0.436
<b>061 808</b>	<b>LAMINATED ROOF DECK:</b>								
061 808-0100	Laminated roof deck pine, cedar, or fir wood, 100 mm thick	SQM	0.125 Labor Foreman 2.000 Carpenters 1.000 Common Laborer 1.000 Power Tools	25	8	36.000	41.000	38.500	0.222
<b>062</b>	<b>FINISH CARPENTRY</b>								
<b>062 200</b>	<b>MILLWORK MOLDINGS</b>								
<b>062 200</b>	<b>MOLDINGS, BASE:</b>								
062 200-0500	Molding base, pine, 14 mm x 90 mm, straight job, no cutting, minimal number of miters	LM	0.125 Labor Foreman 1.000 Carpenters 1.000 Power Tools	8	8	55.000	63.000	59.000	0.145

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062 200-0550	Molding base, pine, 14 mm x 110 mm			9	8	45,000	52,000	48,500	0.178
<b>062 212</b>	<b>MOLDING, CASINGS:</b>								
062 212-0750	Molded pine casing, 17 mm x 90 mm	LM	0.125 Labor Foreman 1,000 Carpenters 1,000 Power Tools	9	8	50,000	58,000	54,000	0.160
<b>062 216</b>	<b>MOLDING, CEILINGS:</b>								
062 216-1200	Cornice molding, pine, 14 mm x 44 mm, straight	LM	0.125 Labor Foreman 1,000 Carpenters 1,000 Power Tools	9	8	70,000	81,000	75,500	0.114
062 216-1300	Cornice molding, pine, 14 mm x 57 mm			9	8	65,000	75,000	70,000	0.123
062 216-2400	Cornice molding, cove, pine, 14 mm x 44 mm			9	8	55,000	63,000	59,000	0.145
062 216-2600	Crown molding, pine, 14 mm x 90 mm			9	8	50,000	58,000	54,000	0.160
062 216-2700	Crown molding, pine, 17 mm x 117 mm			9	8	45,000	52,000	48,500	0.178
<b>062 220</b>	<b>MOLDINGS, EXTERIOR:</b>								
062 220-1500	Moldings exterior, cornice, boards, pine, 25 mm x 50 mm	LM	0.125 Labor Foreman 1,000 Carpenters 1,000 Power Tools	9	8	70,000	81,000	75,500	0.114
062 220-1700	Moldings exterior, cornice, boards, pine, 25 mm x 150 mm			9	8	56,000	64,000	60,000	0.143
062 220-2000	Molding exterior, cornice, boards, pine, 25 mm x 300 mm			9	8	36,000	41,000	38,500	0.222
062 220-3100	Corner board pine 25 mm x 150 mm			9	8	45,000	52,000	48,500	0.178
062 220-3370	Moldings exterior, fascia, pine, 25 mm x 200 mm			9	8	50,000	58,000	54,000	0.160
062 220-3400	Moldings exterior, trim or crown, pine casing			9	8	56,000	64,000	60,000	0.143
<b>062 224</b>	<b>MOLDINGS, TRIM:</b>								
062 224-0250	Astragal, pine, 33 mm x 56 mm	LM	0.125 Labor Foreman 1,000 Carpenters 1,000 Power Tools	9	8	55,000	63,000	59,000	0.145
062 224-0800	Chair rail, 16 mm x 64 mm			9	8	56,000	64,000	60,000	0.143
062 224-0900	Chair rail, 16 mm x 90 mm			9	8	50,000	58,000	54,000	0.160
062 224-1000	Closet pole, wood, 30 mm diameter, up to 2 meter long, including supports			9	8	48,000	55,000	51,500	0.167
062 224-3300	Closet pole, wood, half round, stock pine, 6 mm x 13 mm			9	8	60,000	69,000	64,500	0.133
062 224-3350	Closet pole, half round, stock pine, 13 mm x 25 mm			9	8	58,000	64,000	60,000	0.143
062 224-3470	Handrail, single piece, pine or fir 38 mm x 44 mm, on wall brackets			9	8	18,000	21,000	19,500	0.444
062 224-3480	Handrail, single piece, pine or fir 38 mm x 44 mm, on metal balustrade			9	8	13,000	15,000	14,000	0.615
062 224-3700	Lattice trim, wood 6 mm x 44 mm			9	8	55,000	64,000	60,000	0.143
062 224-3800	Molding trim miscellaneous, pine or cedar, 25 mm x 25 mm			9	8	56,000	64,000	60,000	0.143
062 224-4400	Molding trim miscellaneous, walnut, nominal 25 mm x 25 mm			9	8	45,000	52,000	48,500	0.178
062 224-4700	Molding trim miscellaneous, teak, nominal 25 mm x 75 mm			9	8	40,000	46,000	43,000	0.200
062 224-4900	Molding trim miscellaneous, quarter round, pine, 6 mm x 6 mm			9	8	56,000	64,000	60,000	0.143
062 224-5600	Wainscot molding, 29 mm x 14 mm, 600 mm high			9	8	6,000	7,000	6,500	1.333
<b>062 228</b>	<b>MOLDINGS, WINDOW AND DOOR</b>								
062 228-2800	Door moldings, decorative, 29 mm wide	LM	0.125 Labor Foreman 1,000 Carpenters 1,000 Power Tools	9	8	42,000	48,000	45,000	0.190
062 228-3150	Door trim set, 1 head and 2 sides, pine, 64 mm wide			9	8	30,000	35,000	32,500	0.267
062 228-3200	Glass bead, pine, 6 mm x 17 mm			9	8	64,000	74,000	69,000	0.125
062 228-3250	Glass bead, pine, 10 mm x 13 mm			9	8	64,000	74,000	69,000	0.125
062 228-3270	Glass bead, pine, 10 mm x 22 mm			9	8	60,000	69,000	64,500	0.133
062 228-5000	Stool caps, pine, 17 mm x 90 mm			9	8	36,000	41,000	38,500	0.222
062 228-5300	Threshold, oak, 914 mm long, 16 mm x 90 mm	EA	0.125 Labor Foreman 1,000 Carpenters 1,000 Power Tools	9	8	26,000	30,000	28,000	0.308
062 228-5400	Threshold, oak, 914 mm long, 38 mm x 200 mm	EA		9	8	14,000	16,000	15,000	0.571
062 228-5900	Window trim sets, including casings, header, stops, stool and apron, 64 mm wide, minimum window size 1 m x 1.5 m	OPENING		9	8	4,000	5,000	4,500	2.000
<b>062 300</b>	<b>SHELVING</b>								
<b>062 304</b>	<b>SHELVING:</b>								
062 304-0600	Shelving, plywood, 20 mm thick with lumber edge, 300 mm wide	LM	0.125 Labor Foreman 1,000 Carpenters 1,000 Power Tools	9	8	20,000	23,000	21,500	0.400
062 304-0700	Shelving, plywood, 20 mm thick with lumber edge, 600 mm wide			9	8	15,000	17,000	16,000	0.533
062 304-0900	Shelving, bookcase, clear grade pine, shelves 300 mm O.C., 200 mm deep	SQM		9	8	6,000	7,000	6,500	1.333
062 304-1000	Shelving, bookcase, clear grade pine, shelves 300 mm O.C., 300 mm deep			9	8	6,000	7,000	6,500	1.333
062 304-1200	Shelving, adjustable closet rod and shelf, 300 mm wide, 914 mm long	EA		9	8	15,000	17,000	16,000	0.533
062 304-1300	Shelving, adjustable closet rod and shelf, 300 mm wide, 2.4 m long			9	8	8,000	10,000	9,000	0.400
<b>062 400</b>	<b>PLASTIC LAMINATE</b>								
<b>062 404</b>	<b>CONVECTOR COVERS:</b>								
062 404-0050	Convector covers, laminated plastic on 19 mm thick particle board, 300 mm wide, average	LM	0.125 Labor Foreman 1,000 Carpenters 1,000 Power Tools	9	8	3,000	3,000	3,000	2.667



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<b>062 408</b>	<b>COUNTER TOP:</b>								
062 408-0100	Counter Top, plastic laminated, 600 mm wide w/backsplash, Average	LM	0.125 Labor Foreman 1.000 Carpenters 1.000 Power Tools	9	8	7.500	9.000	8.250	1.067
062 408-1900	For standard cut outs in plastic laminated counter top add	EA		9	8	25.000	29.000	27.000	0.320
062 408-2200	Counter top built-in place, 635 mm wide, plastic laminate	LM		9	8	7.500	9.000	8.250	1.067
062 408-2500	Counter top marble, 600 mm wide, with splash, 13 mm thick, Average		0.125 Labor Foreman 1.000 Bricklayer 1.000 Power Tools	9	8	4.000	5.000	4.500	2.000
062 408-2700	Counter top marble, 600 mm wide, with splash, 20 mm thick, Average			9	8	5.000	3.000	3.000	2.667
062 408-3200	Counter top, 600 mm wide, stainless steel	SQM		9	8	9.000	10.000	9.500	0.889
<b>062 500</b>	<b>PREFINISHED WOOD PANELING:</b>								
<b>062 504</b>	<b>PANELING, PLYWOOD:</b>								
062 504-2400	Plywood, prefinished 6 mm thick, 1.2 m x 2.44 m sheets with vertical grooves, Birch faced, Average in small rooms, required considerable cutting	SQM	0.125 Labor Foreman 1.000 Carpenters 1.000 Common Laborer 1.000 Power Tools	17	8	25.000	29.000	27.000	0.320
062 504-2600	Plywood, prefinished 6 mm thick, 1.2 m x 2.44 m sheets Mahogany, African			17	8	20.000	23.000	21.500	0.400
062 504-2700	Plywood, prefinished 6 mm thick, 1.2 m x 2.44 m sheets Philippine (Lauan), OAK or cherry, Average			17	8	25.000	29.000	27.000	0.320
062 504-3200	Plywood, prefinished 6 mm thick, 1.2 m x 2.44 m sheets Rosewood			17	8	15.000	17.000	16.000	0.533
062 504-3400	Plywood, prefinished 6 mm thick, 1.2 m x 2.44 m sheets Teak			17	8	20.000	23.000	21.500	0.400
062 504-3600	Plywood, prefinished 6 mm thick, 1.2 m x 2.44 m sheets Chestnut			17	8	18.000	21.000	19.500	0.444
062 504-3800	Plywood, prefinished 6 mm thick, 1.2 m x 2.44 m sheets Pecan			17	8	20.000	23.000	21.500	0.400
062 504-3900	Plywood, prefinished 6 mm thick, 1.2 m x 2.44 m sheets Walnut, Average			17	8	20.000	23.000	21.500	0.400
<b>062 550</b>	<b>PREFINISHED HARDBOARD PANEL:</b>								
<b>062 554</b>	<b>PANELING, HARDBOARD:</b>								
062 554-0050	Paneling hardboard, including furring no trim, 6 mm thick	SQM	0.125 Labor Foreman 1.000 Carpenters 1.000 Common Laborer 1.000 Power Tools	17	8	25.000	29.000	27.000	0.320
062 554-1300	Paneling hardboard, plastic faced, including furring, no trim, 6 mm thick	LM		17	8	20.000	23.000	21.500	0.400
062 554-2100	Molding for hardboard, wood or aluminum, average	LM		17	8	70.000	81.000	75.500	0.114
<b>062 600</b>	<b>BOARD PANELING</b>								
<b>062 604</b>	<b>PANELING, BOARDS:</b>								
062 604-6700	Paneling Wood board 25 mm x 100 mm, redwood, or any veneer	SQM	0.125 Labor Foreman 1.000 Carpenters 1.000 Common Laborer 1.000 Power Tools	17	8	15.000	17.000	16.000	0.533
<b>062 700</b>	<b>MISC. FINISH CARPENTRY</b>								
<b>062 704</b>	<b>BEAMS, DECORATIVE:</b>								
062 704-0050	Beams decorative, rough sawn cedar, non load bearing 100 mm x 100 mm	LM	0.125 Labor Foreman 2.000 Carpenters 1.000 Common Laborer 1.000 Power Tools	25	8	60.000	69.000	64.500	0.133
062 704-0200	Beams decorative, rough sawn cedar, non load bearing 100 mm x 200 mm			25	16	55.000	63.000	59.000	0.291
062 704-0400	Beams decorative, rough sawn cedar, non load bearing 100 mm x 300 mm	LM	0.125 Labor Foreman 2.000 Carpenters 1.000 Common Laborer 1.000 Power Tools	25	16	45.000	52.000	48.500	0.356
<b>062 720</b>	<b>FIREPLACE MANTEL BEAM:</b>								
062 720-0050	Fireplace mantel beam rough texture wood, 100 mm x 200 mm, including wood brackets	LM	0.125 Labor Foreman 1.000 Carpenter 1.000 Power Tools	9	8	6.000	7.000	6.500	1.333
062 720-0100	Fireplace mantel beam rough texture wood, 100 mm x 250 mm, including wood brackets			9	8	6.000	7.000	6.500	1.333
062 720-0300	Fireplace mantel beam laminated hardwood 50 mm x 275 mm wide, 1.8 m long with 3 brackets	EA		9	8	3.500	4.000	3.750	2.286
<b>062 730</b>	<b>GRILLES:</b>								
062 730-0300	Grilles and Panels, hardwood, sanded 0.6 m x 1.2 m to 1.2 m x 2.4 m, custom, unfinished, average	SQM	0.125 Labor Foreman 1.000 Carpenter 1.000 Power Tools	9	8	2.500	3.000	2.750	3.200
<b>062 735</b>	<b>HARDWARE:</b> For hardware finish see Div. 064108								
062 735-0100	Hardware Finish, see division 064-108 & 087								
<b>062 740</b>	<b>LOUVERS:</b>								
062 740-0020	Gable roof louver, redwood, full or half circle, 600 mm diameter	EA	0.125 Labor Foreman 1.000 Carpenter 1.000 Power Tools	9	8	10.000	12.000	11.000	0.800
062 740-0300	Gable roof louver, redwood, triangular, 5/12 pitch, 1.5m base			9	8	10.000	12.000	11.000	0.800
<b>062 750</b>	<b>SHUTTERS, EXTERIOR:</b>								
062 750-0400	Shutters fixed, exterior, Aluminum, 400 mm wide, up to 2 meter high, louvered fixed directly to concrete or masonry wall	SQM	0.125 Labor Foreman 1.000 Carpenter 1.000 Power Tools	9	8	10.000	12.000	11.000	0.800
062 750-1100	Shutters fixed, exterior, wood, 400 mm wide, up to 2 meter high, louvered, fixed directly to concrete or masonry wall			9	8	10.000	12.000	11.000	0.800



# **DIVISION 06 : WOOD & PLASTICS**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
062 750-4500	Shutters fixed, exterior, Polystyrene, louvered			9	B	10.000	12.000	11.000	0.800
062 750-6000	Shutters fixed, exterior, Vinyl, louvered			9	B	10.000	12.000	11.000	0.800
062 750-6050	Shutters aluminium, louvered, motor operated, window 1.2 m x 1.2 m		0.125 Labor Foreman 1.000 Carpenter 0.500 Electrician 1.000 Common Laborer 1.000 Power Tools	21	B	12.000	14.000	13.000	0.667
062 778	<b>DOORS AND FRAMES: See division 081 &amp; 083</b>								
064	<b>ARCHITECTURAL WOODWORK</b>								
064 100	<b>CUSTOM CASEWORK</b>								
064 102	<b>CABINETS:</b>								
064 102-0010	Corner China cabinets, pine, 2m high, unfinished, average	EA	0.125 Labor Foreman 2.000 Carpenters 1.000 Common Laborer 1.000 Power Tools	26	B	5.000	6.000	5.500	1.600
064 102-0300	Chins Cabinets with built-in drawer units, pine, 457 mm deep, 610 mm high, unfinished average			25	B	9.000	10.000	9.500	0.889
064 102-0700	Kitchen base cabinets, hardwood, not incl. counter tops, 610 mm deep, 890 mm high, prefinished, with one top drawer, one door below, 300 mm wide			25	B	24.000	26.000	25.000	0.333
064 102-0840	Kitchen base cabinets, hardwood, not incl. counter tops, 610 mm deep, 890 mm high, prefinished, with one top drawer, one door below, 450 mm wide			25	B	18.000	21.000	19.500	0.444
064 102-0880	Kitchen base cabinets, hardwood, not incl. counter tops, 610 mm deep, 890 mm high, prefinished, with one top drawer, one door below, 600 mm wide			25	B	14.000	16.000	15.000	0.571
064 102-1000	Kitchen base cabinets, hardwood, not incl. counter tops, 610 mm deep, 890 mm high, prefinished, with four drawers, 300 mm wide			25	B	24.000	26.000	25.000	0.333
064 102-1040	Kitchen base cabinets, hardwood, not incl. counter tops, 610 mm deep, 890 mm high, prefinished, with four drawers, 450 mm wide			25	B	18.000	21.000	19.500	0.444
064 102-1060	Kitchen base cabinets, hardwood, not incl. counter tops, 610 mm deep, 890 mm high, prefinished, with four drawers, 600 mm wide			25	B	14.000	16.000	15.000	0.571
064 102-1200	Kitchen base cabinets, hardwood, not incl. counter tops, 610 mm deep, 890 mm high, prefinished, with two top drawers, two doors below, 680 mm wide			25	B	19.000	22.000	20.500	0.421
064 102-1260	Kitchen base cabinets, hardwood, not incl. counter tops, 610 mm deep, 890 mm high, prefinished, with two top drawers, two doors below, 910 mm wide			25	B	15.000	17.000	16.000	0.533
064 102-1300	Kitchen base cabinets, hardwood, not incl. counter tops, 610 mm deep, 890 mm high, prefinished, with two top drawers, two doors below, 1.2m wide			25	B	12.000	14.000	13.000	0.667
064 102-1500	Kitchen base cabinets, prefinished, with two doors below, for range or sink, 760 mm wide			25	B	19.000	22.000	20.500	0.421
064 102-1540	Kitchen base cabinets, prefinished, with two doors below, for range or sink, 910 mm wide			25	B	15.000	17.000	16.000	0.533
064 102-1580	Kitchen base cabinets, prefinished, with two doors below, for range or sink, 1.2 m wide			25	B	12.000	14.000	13.000	0.667
064 102-2000	Corner base cabinet, hardwood, not including countertops, standard, 890 mm H, 910 mm wide, prefinished			25	B	13.000	15.000	14.000	0.615
064 102-2100	Corner base cabinet, hardwood, not including countertops, standard, 890 mm H, 910 mm wide, prefinished			25	B	11.000	13.000	12.000	0.727
064 102-4000	Kitchen wall cabinets, hardwood, prefinished, 305 mm deep, 305 mm high with two doors, 760 mm wide			25	B	25.000	29.000	27.000	0.320
064 102-4100	Kitchen wall cabinets, hardwood, prefinished, 305 mm deep, 305 mm high with two doors, 910 mm wide			25	B	22.000	25.000	23.500	0.364
064 102-4050	Kitchen wall cabinets, hardwood, prefinished, 305 mm deep, 360 mm high with two doors, 760 mm wide	EA	0.125 Labor Foreman 2.000 Carpenters 1.000 Common Laborer 1.000 Power Tools	25	B	20.000	23.000	21.500	0.400
064 102-4440	Kitchen wall cabinets, hardwood, prefinished, 305 mm deep, 305 mm to 360 mm high with two doors, 910 mm wide			25	B	17.000	20.000	18.500	0.471
064 102-4700	Kitchen wall cabinets, hardwood, prefinished, 305 mm deep, 610 mm high with two doors, 760 mm wide			25	B	14.000	16.000	15.000	0.571
064 102-4720	Kitchen wall cabinets, hardwood, prefinished, 305 mm deep, 610 mm high with two doors, 910 mm wide			25	B	11.000	13.000	12.000	0.727
064 102-5000	Kitchen wall cabinets, hardwood, prefinished, 305 mm deep, 762 mm high with one door, 300 mm wide			25	B	25.000	29.000	27.000	0.320
064 102-5040	Kitchen wall cabinets, hardwood, prefinished, 305 mm deep, 762 mm high with one door, 450 mm wide			25	B	17.000	20.000	18.500	0.471
064 102-5060	Kitchen wall cabinets, hardwood, prefinished, 305 mm deep, 762 mm high with one door, 600 mm wide			25	B	14.000	16.000	15.000	0.571
064 102-5300	Kitchen wall cabinets, hardwood, prefinished, 305 mm deep, 762 mm high with two doors, 685 mm wide			25	B	13.000	15.000	14.000	0.615
064 102-5340	Kitchen wall cabinets, hardwood, prefinished, 300 mm deep, 760 mm high with two doors, 910 mm wide			25	B	10.000	12.000	11.000	0.800
064 102-5380	Kitchen wall cabinets, hardwood, prefinished, 300 mm deep, 760mm high with two doors, 1.2 m wide			25	B	9.000	10.000	9.500	0.889
064 102-6000	Corner wall cabinet, hardwood, prefinished, 760 mm high, 600 mm wide			25	B	8.000	9.000	8.500	1.000
064 102-6050	Corner wall cabinet, hardwood, prefinished, 760 mm high, 760 mm wide			25	B	7.800	9.000	8.300	1.053
064 102-6100	Corner wall cabinet, hardwood, prefinished, 760 mm high, 900 mm wide			25	B	7.000	8.000	7.500	1.143
064 102-7000	Broom cabinet, 2.1m high, 610 mm deep, 460 mm wide			25	B	7.000	8.000	7.500	1.143
064 102-7500	Kitchen cabinet for 2 built-in ovens, 1 door below ovens, 1 door above ovens, 2.1m high, 610 mm deep, 685 mm wide	LM		25	B	6.000	7.000	6.500	1.200
064 102-7550	Kitchen cabinet for 1 oven, 1 door and with top, provision for hood 1.4 m high, 600 mm deep, 685 mm wide			25	B	6.000	7.000	6.500	1.200
064 102-7750	Valance board trim			25	B	130.000	14.000	14.000	
064 102-9550	Rule of thumb, kitchen cabinets not including appliance and counter top, average labor per LM			25	B	8.000	9.000	8.500	1.000
064 102-9610	For metal cabinets. See division 123-501								



# **DIVISION 06 : WOOD & PLASTICS**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN.	D. O. MAX.	D. O. AVR.	AVRG. E. H.
<b>064 104</b>	<b>CASEWORK, FRAMES:</b>								
064 104-0050	Casework framing, base cabinets, counter storage, 914 mm high, 457 mm wide, one bay	EA	0.125 Labor Foreman 1.000 Carpenter 1.000 Power Tools	9	8	2.600	3.000	2.800	3.077
064 104-0400	Casework framing, base cabinets, counter storage, 914 mm high, 914 mm wide, two bay			9	8	1.600	2.000	1.800	5.000
064 104-1100	Casework framing, base cabinets, counter storage, 914 mm high, 1372 mm wide, three bay			9	8	1.100	1.500	1.300	7.273
064 104-2800	Casework framing, book cases, one bay, 2.1 m high, 457 mm wide			9	8	1.700	2.000	1.850	4.706
064 104-3500	Casework framing, book cases, two bay, 2.1 m high, 914 mm wide			9	8	0.900	1.000	0.950	8.889
064 104-4100	Casework framing, book cases, three bay, 2.1 m high, 1.4 m wide			9	8	0.600	1.000	0.800	13.333
064 104-5100	Casework framing, coat racks, one bay, 2.1 m high, 610 mm wide			9	8	1.400	2.000	1.700	5.714
064 104-5300	Casework framing, coat racks, two bay, 2.1 m high, 1.2 m wide			9	8	0.800	1.000	0.900	10.000
064 104-5800	Casework framing, coat racks, three bay, 2.1 m high, 1.8 m wide			9	8	0.500	1.000	0.750	16.000
064 104-6100	Casework framing, wall mounted cabinet, one bay, 610 mm high, 457 mm wide			9	8	4.000	5.000	4.500	2.000
064 104-7400	Casework framing, wall mounted cabinet, three bay, 610 mm high, 1.4 m wide			9	8	1.700	2.000	1.850	4.706
064 104-8400	Casework framing, wall mounted cabinet, one bay, 760 mm high, 457 mm wide			9	8	3.100	4.000	3.550	2.581
064 104-9000	Casework framing, wall mounted cabinet, two bay, 760 mm high, 910 mm wide			9	8	1.900	2.000	1.950	4.211
064 104-9800	Casework framing, wardrobe, 2.1 m high, single, 610 mm wide			9	8	1.000	1.000	1.000	8.000
<b>064 106</b>	<b>CABINET DOORS</b>								
064 106-2000	Cabinet door, glass panel, hardwood frame 305 mm wide, 457 mm high	EA	0.125 Labor Foreman 1.000 Carpenter 1.000 Power Tools	9	8	25.000	29.000	27.000	0.320
064 106-2600	Cabinet door, glass panel, hardwood frame 305 mm wide, 762 mm high			9	8	22.000	25.000	23.500	0.364
064 106-5000	Cabinet door, hardwood, raised panel, 305 mm wide, 457 mm high			9	8	23.000	26.000	24.500	0.348
064 106-5600	Cabinet door, hardwood, raised panel, 305 mm wide, 762 mm high			9	8	19.000	22.000	20.500	0.421
064 106-6000	Cabinet door, plastic laminate on particleboard, 305 mm wide, 457 mm high			9	8	20.000	23.000	21.500	0.400
064 106-6140	Cabinet door, plastic laminate on particleboard, 305 mm wide, 762 mm high			9	8	15.000	18.000	17.000	0.500
064 106-6500	Cabinet door, plastic laminate on particleboard, 457 mm wide, 762 mm high			9	8	15.000	17.000	16.000	0.533
<b>064 108</b>	<b>CABINET HARDWARE</b>								
064 108-1000	Cabinet catches, Average	EA	0.125 Labor Foreman 1.000 Carpenter 1.000 Power Tools	9	8	175.000	201.000	188.000	0.046
064 108-2000	Cabinet door/drawer pulls, handles	EA	0.125 Labor Foreman 1.000 Carpenter 1.000 Power Tools	9	8	70.000	81.000	75.500	0.114
064 108-3000	Cabinet drawer tracks/glides, Average	PAIR	0.125 Labor Foreman 1.000 Carpenter 1.000 Power Tools	9	8	30.000	35.000	32.500	0.267
064 108-4000	Cabinet hinges, Average	EA		9	8	60.000	69.000	64.500	0.133
<b>064 110</b>	<b>DRAWERS</b>								
064 110-1000	Drawers, solid hardwood front, 100 mm high, 300 mm wide	EA	0.125 Labor Foreman 1.000 Carpenter 1.000 Power Tools	9	8	12.000	14.000	13.000	0.667
064 110-1200	Drawers, solid hardwood front, 100 mm high, 457 mm wide			9	8	10.000	12.000	11.000	0.800
064 110-2600	Drawers, plastic laminate on particle board front, 100 mm high, 457 mm wide			9	8	10.000	12.000	11.000	0.800
<b>064 140</b>	<b>VANITIES</b>								
064 141-8000	Vanity bases, 2 doors, 760 mm high, 530 mm deep, 610 mm wide	EA	0.125 Labor Foreman 2.000 Carpenters 1.000 Common Laborer 1.000 Power Tools	25	8	19.000	22.000	20.500	0.421
064 141-8050	Vanity bases, 2 doors, 760 mm high, 530 mm deep, 760 mm wide			25	8	15.000	17.000	16.000	0.533
064 141-8100	Vanity bases, 2 doors, 760 mm high, 530 mm deep, 910 mm wide			25	8	13.000	15.000	14.000	0.615
064 141-8150	Vanity bases, 2 doors, 760 mm high, 530 mm deep, 1.2 m wide			25	8	10.000	12.000	11.000	0.800
064 141-9500	Vanity base, custom, built-in place, 2 doors, 760 mm high, 530 mm deep, 1.2 m wide			25	8	1.000	1.000	1.000	8.000
<b>064 300</b>	<b>STAIRWORK &amp; HANDRAILS</b>								
<b>064 306</b>	<b>STAIRS PREFABRICATED</b>								
064 306-0100	Box stairs, prefabricated 910 mm wide, oak or pine treads, no handrails, 600 mm high	EA	0.125 Labor Foreman 2.000 Carpenters 1.000 Common Laborer 1.000 Power Tools	25	8	5.000	6.000	5.500	1.600
064 306-0200	Box stairs, prefabricated 910 mm wide, oak or pine treads, no handrails, 1.8 m high			25	8	3.000	4.000	3.500	2.667
064 306-0400	Box stairs, prefabricated 910 mm wide, oak or pine treads, no handrails, 2.45 m high			25	8	2.500	3.000	2.750	3.200
064 306-1500	Prefabricated stair rail with baluster, 5 risers			25	8	14.000	16.000	15.000	0.571
064 306-2100	Open stairs, prefabricated prefinished, metal stringers, wood treads 1 m wide, no railing, 1.2 m high			25	8	4.000	5.000	4.500	2.000
064 306-2200	Open stairs, prefabricated prefinished, metal stringers, wood treads 1 m wide, no railing, 1.8 m high			25	8	3.000	4.000	3.500	2.667
064 306-2300	Open stairs, prefabricated prefinished, metal stringers, wood treads 1 m wide, no railing, 2.45 m high			25	8	2.500	3.000	2.750	3.200

# **DIVISION 06 : WOOD & PLASTICS**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
064 306-3400	Curved stairway, 990 mm wide, prefabricated Oak, unfinished, including balustrade system open one side 2.75 m high			25	8	0.625	1.000	0.813	12.800
064 306-3500	Curved stairway, 990 mm wide, prefabricated Oak, unfinished, including balustrade system open one side 3 m high			25	8	0.625	1.000	0.813	12.800
064 306-3700	Curved stairway, 990 mm wide, prefabricated Oak, unfinished, including balustrade system open two sides 2.75 m high			25	8	0.375	0.500	0.438	21.333
064 306-3800	Curved stairway, 990 mm wide, prefabricated Oak, unfinished, including balustrade system open two sides 3 m high			25	8	0.375	0.500	0.438	21.333
064 306-4400	Spiral Oak stair, unfinished, prefabricated 1.4 m diameter, including railing, 2.75 m high			25	8	1.000	1.500	1.250	8.000
<b>064 308</b>	<b>STAIR PARTS</b>								
064 308-0900	Stair baluster, pine or birch, 1.1 m high	EA	0.125 Labor Foreman 1.000 Carpenter 1.000 Power Tools	9	8	24.000	26.000	26.000	0.333
064 308-1200	Stair starting newels, 80 mm wide	"		6	8	5.000	6.000	5.500	1.600
064 308-1500	Stair landing newel 80 mm wide, pine or birch	"		6	8	4.000	5.000	4.500	2.000
064 308-1800	Stair railings, oak, built-up, including the subrail, average	LM		8	8	10.000	12.000	11.000	0.800
064 308-2600	Stair riser oak 20 mm x 190 mm high			8	8	12.000	14.000	13.000	0.667
064 308-2850	Stair skirt board, pine, 25 mm x 250 mm			8	8	10.000	12.000	11.000	0.800
064 308-3300	Stair treads 27 mm x 300 mm wide, 1.8 m long	EA		8	8	9.000	10.000	9.500	0.889
<b>064 310</b>	<b>RAILING:</b>								
064 310-0300	Interior railing architectural grade, hardwood, with spindles 150 mm D.C., 1.2 m long	LM	0.125 Labor Foreman 1.000 Carpenter 1.000 Power Tools	9	8	8.000	9.000	8.500	1.000
064 310-0400	Interior railing architectural grade, hardwood, with spindles 150 mm D.C., 2.44 m long	LM		9	8	9.000	10.000	9.500	0.889
<b>064 400</b>	<b>MISC. ORNAMENTAL ITEMS</b>								
<b>064 402</b>	<b>COLUMNS:</b>								
064 402-0050	Columns with base plate, Aluminum, round, 150 mm diameter, 3 meters high	LM	0.125 Labor Foreman 1.000 Carpenter 1.000 Common Laborer 1.000 Power Tools	17	8	4.000	5.000	4.500	2.000
064 402-0100	Columns with base plate, Aluminum, round, 200 mm diameter, 5 meters high			17	8	2.000	3.000	2.500	4.000
064 402-0200	Columns with base plate, Aluminum, round, 250 mm diameter, 6 meters high			17	8	1.500	2.000	1.750	5.333
064 402-0220	Columns cherry, square, 200 mm x 200 mm, 4 meter high, w/ decorative base & crown			17	8	1.250	2.000	1.625	6.400
064 402-0250	Columns with base plate, fir wood, hollow round, 150 mm diameter, 4 meter high	LM	0.125 Labor Foreman 1.000 Carpenter 1.000 Common Laborer 1.000 Power Tools	17	8	3.500	4.000	3.750	2.266
064 402-0300	Columns with base plate, fir wood, hollow round, 200 mm diameter, 6 meter high			17	8	1.850	2.000	1.925	4.324
064 402-0350	Columns with base plate, fir wood, hollow round, 250 mm diameter, 7 meter high			17	8	1.750	2.000	1.875	4.571
064 402-0800	Square column with base plate, built up 127 mm x 127 mm, hollow core, fire wood, 3 meter high			17	8	2.500	3.000	2.750	3.200
064 402-0900	Square column with base plate, built up, 90 mm x 90 mm, solid, fire wood, 3 meter high			17	8	4.500	5.000	4.750	1.778
064 402-4000	Posts, rough sawn cedar, 100 mm x 100 mm, 4 meter high			17	8	12.000	14.000	13.000	0.667
064 402-4200	Posts, rough sawn cedar, 150 mm x 150 mm, 4 meter high			17	8	10.000	12.000	11.000	0.800
064 402-4300	Posts, rough sawn cedar, 1200 x 200 mm, 4 meter high			17	8	9.000	10.000	9.500	0.889
<b>064 410</b>	<b>MILLWORK, HIGH DENSITY POLYMER</b>								
064 410-0100	Millwork, High density polymer base, 14 mm x 80 mm	LM	0.125 Labor Foreman 1.000 Carpenter 1.000 Common Laborer 1.000 Power Tools	17	8	55.000	63.000	59.000	0.145
064 410-0200	Millwork, High density polymer casing, fluted, 16 mm x 60 mm			17	8	50.000	58.000	54.000	0.160
064 410-0300	Millwork, High density polymer, Chair rail, 14 mm x 57 mm			17	8	56.000	64.000	60.000	0.143
064 410-0400	Millwork, High density polymer, Chair rail, 16 mm x 80 mm			17	8	50.000	58.000	54.000	0.160
064 410-0500	Millwork, High density polymer, corner, inside, 13 mm x 29 mm			17	8	52.000	60.000	56.000	0.154
064 410-0600	Millwork, High density polymer, cove, 21 mm x 95 mm			17	8	56.000	64.000	60.000	0.143
064 410-0700	Millwork, High density polymer, crown, 19 mm x 97 mm			17	8	56.000	64.000	60.000	0.143
064 410-0800	Millwork, High density polymer, half round, 24 mm x 50 mm			17	8	56.000	64.000	60.000	0.143



A decorative geometric pattern, resembling a complex tessellation of stars and polygons, is located in the top right corner of the page. The pattern is rendered in a dark gray color against a lighter background.

# Division 7

## Thermal & Moisture Protection

## **Division 7.. Thermal & Moisture Protection..**

### **Estimating Tips:**

#### **071 Water Proofing & Damp-proofing:**

As a matter of fact, that no one can be familiar with the many different types of water and damp-proofing in the worldwide market. Be sure of the job specifications before pricing this subdivision. The difference in cost between water proofing and damp-proofing can be great. Water-proofing will hold back standing water. Damp-proofing prevents the transmission of water vapor.

Method of applying such materials differs from one manufacturer to another to ensure a water resistant surface. Estimators shall consult local manufacturers for such items pricing.

#### **072 Insulation & Fire-Proofing:**

Insulation and fire-proofing products are measured by area, thickness, volume or R value. Specifications may only give what the specific R value should be in a certain situation. The estimator may need to choose the type of insulation to meet the R value.

#### **075 Membrane Roofing.**

#### **076 Flashing & Sheet Metal.**

#### **077 Roof Specialties & Accessories.**

#### **078 Skylights:**

The items in these sub-divisions compose a roofing system. Several different installation trades will need to work together on the roofing system.

Inherent various trades must be accounted for when estimating labor costs.

#### **079 Joint Sealers:**

To complete the weather-tight, the sealants and caulking must be estimated. When caulking or sealant are shown at typical locations, this means that estimator must include them for all the locations where this detail is applicable.

Be careful to keep different types of sealant separate, and remember to consider backer rods and primers if necessary.



**DIVISION 07 THERMAL & MOISTURE PROTECTION**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
<b>071</b>	<b>WATERPROOFING &amp; DAMPPROOFING</b>								
<b>071 100</b>	<b>SHEET WATERPROOFING:</b>								
<b>071 102</b>	<b>ELASTOMERIC WATERPROOFING:</b>								
071 102-0010	Elastomeric waterproofing, EPDM plain 0.8 mm thick on metal	SQM	0.125 Skilled Foreman 2.000 Roof Workers 1.000 Tools Set	17	8	45.000	52.000	48.500	0.178
071 102-0020	Elastomeric waterproofing, EPDM plain 0.8 mm thick on concrete			17	8	95.000	109.000	102.000	0.084
071 102-0100	Elastomeric waterproofing, EPDM plain 1.6 mm thick on metal			17	8	42.000	48.000	45.000	0.190
071 102-0120	Elastomeric waterproofing, EPDM plain 1.6 mm thick on concrete			17	8	90.000	104.000	97.000	0.089
071 102-0300	Elastomeric waterproofing, Nylon reinforced sheets upto 1.6 mm thick on concrete			17	8	45.000	52.000	48.500	0.178
071 102-1500	Elastomeric waterproofing, Neoprene nylon reinforced 0.8 mm			17	8	45.000	52.000	48.500	0.178
071 102-1800	Elastomeric waterproofing, nylon reinforced, 3 mm thick on concrete			17	8	38.000	44.000	41.000	0.211
071 102-2100	Elastomeric waterproofing, neoprene sheets, fiberglass reinforced, fluid applied 3 mm thick			17	8	38.000	44.000	41.000	0.211
071 102-2200	Elastomeric waterproofing, Polyethylene and rubberized asphalt sheets, 3mm thick, on metal			17	8	40.000	46.000	43.000	0.200
071 102-2210	Elastomeric waterproofing, Polyethylene and asphaltic hardboard protection board, 3 mm thick, on metal			17	8	38.000	44.000	41.000	0.211
071 102-2220	Elastomeric waterproofing, Polyethylene and asphaltic hardboard protection board, 6 mm thick, on metal			17	8	35.000	40.000	37.500	0.229
071 102-2400	Elastomeric waterproofing, Polyvinyl chloride sheets plain upto 0.76 mm thick, on metal			17	8	42.000	48.000	45.000	0.190
071 102-3300	Elastomeric waterproofing, Bitumen modified polyurethane fluid applied 1mm thick, on metal			17	8	52.000	60.000	56.000	0.154
071 102-3600	Elastomeric waterproofing, Vinyl plastic sprayed on, 0.6 to 1 mm thick, on metal			17	8	37.000	43.000	40.000	0.216
<b>071 104</b>	<b>MEMBRANE WATERPROOFING:</b>								
071 104-0010	Membrane waterproofing, on slabs, 1 ply, felt	SQM	1 Roofer Foreman 4 Roofers, Composition 2 Roofer Helpers 1 Application Equipment 1 Tar Kettle/Pot	56	16	250.000	285.000	269.000	0.064
071 104-0100	Membrane waterproofing, on slabs, 1 ply, glass fiber fabric			56	16	190.000	219.000	204.500	0.084
071 104-0600	Membrane waterproofing, on slabs, 3 ply, felt			56	16	95.000	109.000	102.000	0.188
071 104-0700	Membrane waterproofing, on slabs, 3 ply, glass fiber fabric			56	16	80.000	92.000	86.000	0.200
071 104-0900	Membrane waterproofing, on walls, 1 ply, felt			56	16	200.000	230.000	215.000	0.060
071 104-0910	Membrane waterproofing, on walls, 3 ply, felt			56	16	80.000	92.000	86.000	0.200
071 104-0920	Membrane waterproofing, on walls, 3 ply, glass fiber fabric			56	16	65.000	75.000	70.000	0.246
071 104-1000	Membrane waterproofing, on walls, 3 ply felt & adhered 6 mm thick expanded polystyrene protection board		1 Roofer Foreman 6 Roofers, Composition 2 Roofer Helpers 1 Application Equipment 1 Tar Kettle/Pot	72	16	80.000	92.000	86.000	0.200
071 104-1070	Membrane waterproofing, Fiberglass fabric, black mesh		0.125 Skilled Foreman 2.000 Roof Workers 1.000 Tools Set	17	8	800.000	920.000	860.000	0.010
071 104-1100	Membrane waterproofing, Fluid neoprene, 4 coats, 1 mm			17	8	15.000	17.000	16.000	0.533
071 104-1200	Membrane waterproofing, Fluid neoprene, 4 coats, 2 mm			17	8	9.000	10.000	9.500	0.889
<b>071 300</b>	<b>BENTONITE WATERPROOFING</b>								
<b>071 450</b>	<b>CEMENT WATERPROOFING</b>								
<b>071 452</b>	<b>CEMENTITIOUS WATERPROOFING:</b>								
071 452-0020	Cementitious waterproofing, one coat cement base 3 mm application, sprayed on	SQM	0.125 Skilled Foreman 1.000 Plasterer 1.000 Plasterer Helper 1.000 Building Laborer 1.000 Grouting Equipment	25	8	75.000	86.000	80.500	0.107
<b>071 600</b>	<b>BITUMINOUS DAMPPROOFING</b>								
<b>071 602</b>	<b>BITUMINOUS ASPHALT COATING:</b>								
071 602-0030	Bituminous Asphalt coating, Brushed on, below grade, 1 coat	SQM	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Helper 1.000 Tools Set	17	8	55.000	63.000	59.000	0.145
071 602-0100	Bituminous Asphalt coating, Brushed on, below grade, 2 coat			17	8	40.000	46.000	43.000	0.200
071 602-0300	Bituminous Asphalt coating, Sprayed on, below grade, 1 coat, 0.63 m <sup>2</sup> /Liter			17	8	70.000	81.000	75.500	0.114
071 602-0400	Bituminous Asphalt coating, Sprayed on, below grade, 2 coat, 0.50 m <sup>2</sup> /Liter			17	8	40.000	46.000	43.000	0.200
071 602-0700	Bituminous Asphalt coating, Troweled on, asphalt coating with fibers, 3 mm thick			17	8	32.000	37.000	34.500	0.250
071 602-1000	Bituminous Asphalt coating, Troweled on, asphalt coating with fibers, 13 mm thick			17	8	27.000	31.000	29.000	0.296
071 602-4000	Bituminous Asphalt coating, Protective board asphalt coated in mastic, 6 mm thick			17	8	36.000	41.000	38.500	0.222
<b>071 750</b>	<b>WATER REPELLENT COAT</b>								
<b>071 754</b>	<b>RUBBER COATING:</b>								
071 754-0010	Rubber coating, Water base liquid, roller applied	SQM	0.125 Skilled Foreman 2.000 Roofers, Composition 2.000 Consumable Tools Set	17	8	450.000	518.000	484.000	0.018
071 754-0300	Rubber coating, Silicone or stearate, sprayed on masonry, 2 coat			17	8	145.000	167.000	156.000	0.055



DIVISION 07: THERMAL & MOISTURE PROTECTION										
CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.	
071 800	CEMENTITIOUS DAMPPROOFING									
071 802	CEMENT PARGING:									
071 802-0010	Cement Parging, 2 coats, 13 mm thick, regular portland cement or waterproofed portland cement	SQM	0.125 Labor Foreman 1.000 Mason 1.000 Mason Helper 1.000 Tools Set	17	B	18.000	21.000	19.500	0.444	
071 920	VAPOR RETARDERS									
071 922	BUILDING PAPER:									
071 922-0010	Building Paper, Aluminium and kraft laminated, foil 1 side or 2 sides	SQM	0.125 Labor Foreman 1.000 Carpenter 1.000 Helper 1.000 Tools Set	17	B	275.000	316.000	295.500	0.029	
071 922-0100	Building Paper, Aluminium and kraft laminated, foil 2 sides			17	B	275.000	316.000	295.500	0.029	
071 922-0300	Building Paper, Asphalt, two ply, 13.60 kg for subfloors			17	B	137.000	156.000	147.500	0.058	
071 922-0400	Building Paper, Asphalt felt sheathing paper, 6.80 kg			17	B	275.000	316.000	295.500	0.029	
071 922-0500	Building Paper, Polyethylene vapor barrier, standard from 0.05 mm thick to 0.25 mm thick			17	B	275.000	316.000	295.500	0.029	
071 922-1300	Building Paper, Polyethylene vapor barrier, clear reinforced fire retardant, 0.20 mm thick			17	B	275.000	316.000	295.500	0.029	
071 922-1500	Building Paper, Red rosin, 46 m2 rolls upto 0.244 kg/m2			17	B	275.000	316.000	295.500	0.029	
071 922-2400	Building Paper, Waterproofed kraft with sisal or fiberglass fibers, average			17	B	275.000	316.000	295.500	0.029	
072	INSULATION & FIREPROOFING									
072 104	CEMENTITIOUS INSULATION See division 035-212									
072 107	HEATING INSULATION See division 155-651									
072 108	MASONRY INSULATION:									
072 108-0100	Masonry Insulation, Vermiculite or perlite, poured, in cores of concrete block, 100 mm thick wall	SQM	0.125 Labor Foreman 1.000 Bricklayer 1.000 Bricklayer Helper 1.000 Tools Set	17	B	350.000	403.000	376.500	0.023	
072 108-0200	Masonry Insulation, Vermiculite or perlite, poured, in cores of concrete block, 150 mm thick wall			17	B	220.000	253.000	236.500	0.036	
072 108-0300	Masonry Insulation, Vermiculite or perlite, poured, in cores of concrete block, 200 mm thick wall			17	B	175.000	201.000	188.000	0.046	
072 108-0400	Masonry Insulation, Vermiculite or perlite, poured, in cores of concrete block, 250 mm thick wall			17	B	135.000	155.000	145.000	0.059	
072 108-0600	Masonry Insulation, vermiculite or perlite, poured in cavity wall, water repellant	CUM		17	B	5.500	6.000	5.750	1.455	
072 108-0700	Masonry Insulation, Foamed in place, urethane 67 mm thick in cavity wall		0.125 Labor Foreman 1.000 Mason 1.000 Mason Helper 1.000 Building Laborer 1.000 Grouting Equipment	25	B	0.650	1.000	0.825	12.308	
072 109	PERIMETER INSULATION:									
072 109-0600	Perimeter Insulation, expanded polystyrene 25 mm thick	SQM	0.125 Labor Foreman 1.000 Carpenter 1.000 Mason 1.000 Tools Set	17	B	65.000	75.000	70.000	0.123	
072 109-0700	Perimeter Insulation, expanded polystyrene 50 mm thick			17	B	65.000	75.000	70.000	0.123	
072 110	POURED INSULATION:									
072 110-0010	Poured Insulation, Cellulose fiber, or fiberglass wool, or mineral wool	CUM	0.125 Labor Foreman 1.000 Carpenter 1.000 Helper 1.000 Tools Set	17	B	4.500	5.000	4.750	1.778	
072 110-0400	Poured Insulation, Vermiculite or perlite			17	B	4.500	5.000	4.750	1.778	
072 111	REFLECTIVE:									
072 111-0100	Reflective Insulation, aluminium foil on 18 kg kraft, multilayered with air spaces, 2 ply	SQM	0.125 Labor Foreman 1.000 Carpenter 1.000 Helper 1.000 Tools Set	17	B	170.000	196.000	183.000	0.047	
072 111-0500	Reflective Insulation, aluminium foil on 18 kg kraft, multilayered with air spaces, 3 ply or 5 ply			17	B	135.000	155.000	145.000	0.059	
072 112	REFRIGERATION INSULATION See division 130-380									
072 114	SHEATHING See division 061-154									
072 115	SPRAYED INSULATION:									
072 115-0010	Insulation sprayed, Fibrous/cementitious finished wall, 25 mm thick	SQM	0.125 Labor Foreman 1.000 Mason 1.000 Mason Helper 1.000 Building Laborer 1.000 Grouting Equipment	25	B	150.000	173.000	161.500	0.053	
072 115-0600	Insulation sprayed, urethane foam type, on roofs, incl. preparation, 25 mm thick	SQM	0.125 Labor Foreman 1.000 Mason 1.000 Mason Helper 1.000 Building Laborer 1.000 Grouting Equipment	25	B	56.000	64.000	60.000	0.143	
072 115-0700	Insulation sprayed, urethane foam type, on roofs, including preparation, 50 mm thick			25	B	35.000	40.000	37.500	0.226	
072 116	WALL INSULATION, RIGID:									
072 116-0040	Wall Insulation rigid, Fiberglass, 24 kg/m3, unfaced, 25 mm to 50 mm thick	SQM	0.125 Labor Foreman 1.000 Carpenter 1.000 Helper 1.000 Tools Set	17	B	100.000	115.000	107.500	0.080	
072 116-0100	Wall Insulation rigid, Fiberglass, 24 kg/m3, unfaced or foil faced, 25 mm to 75 mm thick			17	B	80.000	92.000	86.000	0.100	



**DIVISION 07 : THERMAL & MOISTURE PROTECTION**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
072 116-0370	Wall insulation rigid,Fiberglass, 48 kg/m <sup>3</sup> , unfaced or foil faced, 25 mm thick or 38 mm thick			17	8	100.000	115.000	107.500	0.080
072 116-0400	Wall insulation rigid,Fiberglass, 48 kg/m <sup>3</sup> , unfaced or foil faced, 50 mm thick			17	8	90.000	104.000	97.000	0.089
072 116-0420	Wall insulation rigid,Fiberglass, 48 kg/m <sup>3</sup> , unfaced or foil faced, 64 mm thick or 75 mm thick			17	8	80.000	92.000	86.000	0.100
072 116-0670	Wall insulation rigid,Fiberglass, 96 kg/m <sup>3</sup> , unfaced or foil faced, 25 mm thick			17	8	100.000	115.000	107.500	0.080
072 116-0690	Wall insulation rigid,Fiberglass, 96 kg/m <sup>3</sup> , unfaced or foil faced, 38 mm thick			17	8	90.000	104.000	97.000	0.089
072 116-0700	Wall insulation rigid,Fiberglass, 96 kg/m <sup>3</sup> , unfaced or foil faced, 50 mm thick or 64 mm thick			17	8	80.000	92.000	86.000	0.100
072 116-0721	Wall insulation rigid,Fiberglass, 96 kg/m <sup>3</sup> , unfaced or foil faced, 75 mm thick			17	8	75.000	86.000	80.500	0.107
072 116-1500	Wall insulation rigid,Foamglass, 38 mm thick			17	8	80.000	92.000	86.000	0.100
072 116-1550	Wall insulation rigid,Foamglass, 77 mm thick			17	8	75.000	86.000	80.500	0.107
072 116-1600	Wall insulation rigid, Isocyanurate, 1.2 m x 2.44 m sheet, foil faced both sides, 13 mm thick			17	8	80.000	92.000	86.000	0.100
072 116-1620	Wall insulation rigid, Isocyanurate, 1.2 m x 2.44 m sheet, foil faced, both sides 16 mm thick to 25 mm thick			17	8	80.000	92.000	86.000	0.100
072 116-1650	Wall insulation rigid, Isocyanurate, 1.2 m x 2.44 m sheet, foil faced, both sides 38 mm thick to 100 mm thick			17	8	75.000	86.000	80.500	0.107
072 116-1700	Wall insulation rigid, Perlite, 25 mm thick			17	8	80.000	92.000	86.000	0.100
072 116-1750	Wall insulation rigid, Perlite, 50 mm thick			17	8	75.000	86.000	80.500	0.107
072 116-1900	Wall insulation rigid, Extruded or expanded polystyrene, 1.75 kg/cm <sup>2</sup> , 25 mm thick			17	8	80.000	92.000	86.000	0.100
072 116-1940	Wall insulation rigid, Extruded or expanded polystyrene, 1.75 kg/cm <sup>2</sup> , 50 mm thick or 75 mm thick			17	8	75.000	86.000	80.500	0.107
072 116-2140	Wall insulation rigid, Sheathing, insulating foil faced fiberboard, 10 mm thick			17	8	70.000	81.000	75.500	0.114
<b>072 118</b>	<b>WALL OR CEILING INSUL.,NON-RIGID:</b>								
072 118-0060	Wall or ceiling insulation,non-rigid,Fiberglass,kraft or foil faced, batts or blankets, 90mm thick, 280 mm wide	SQM	0.125 Labor Foreman 1.000 Carpenter 1.000 Helper 1.000 Tools Set	17	8	120.000	138.000	129.000	0.067
072 118-0080	Wall or ceiling insulation,non-rigid,Fiberglass,kraft or foil faced, batts or blankets, 90 mm thick, 380 or 600 mm wide			17	8	160.000	184.000	172.000	0.050
072 118-0140	Wall or ceiling insulation,non-rigid,Fiberglass,kraft or foil faced, batts or blankets, 150 mm thick, 280 mm wide			17	8	100.000	115.000	107.500	0.080
072 118-0160	Wall or ceiling insulation,non-rigid,Fiberglass,kraft or foil faced, batts or blankets, 150 mm thick, 380 mm wide			17	8	135.000	155.000	145.000	0.059
072 118-0180	Wall or ceiling insulation,non-rigid,Fiberglass,kraft or foil faced, batts or blankets, 150 mm thick, 600 mm wide			17	8	160.000	184.000	172.000	0.050
072 118-0200	Wall or ceiling insulation,non-rigid,Fiberglass,kraft or foil faced, batts or blankets, 230 mm thick, 380 mm wide			17	8	120.000	138.000	129.000	0.067
072 118-0220	Wall or ceiling insulation,non-rigid,Fiberglass,kraft or foil faced, batts or blankets, 230 mm thick, 600 mm wide			17	8	135.000	155.000	145.000	0.059
072 118-0240	Wall or ceiling insulation,non-rigid,Fiberglass,kraft or foil faced, batts or blankets, 300 mm thick, 380 mm wide			17	8	100.000	115.000	107.500	0.080
072 118-0260	Wall or ceiling insulation,non-rigid,Fiberglass,kraft or foil faced, batts or blankets, 300 mm thick, 600 mm wide			17	8	135.000	155.000	145.000	0.059
072 118-0860	Wall or ceiling insulation,non-rigid,Fiberglass,unfaced,batts or blankets, 150 mm thick, 600 mm wide			17	8	135.000	155.000	145.000	0.059
072 118-0900	Wall or ceiling insulation,non-rigid,Fiberglass,unfaced,batts or blankets, 230 mm thick, 600 mm wide			17	8	120.000	138.000	129.000	0.067
072 118-1300	Wall or ceiling insulation,non-rigid,Mineral fiber batts,kraft faced, 90 mm thick			17	8	160.000	184.000	172.000	0.050
072 118-1380	Wall or ceiling insulation,non-rigid,Mineral fiber batts,kraft faced, 250 mm thick			17	8	135.000	155.000	145.000	0.059
<b>072 200</b>	<b>ROOF &amp; DECK INSULATION</b>								
<b>072 202</b>	<b>ROOF FORM BOARD See division 035-304</b>								
<b>072 203</b>	<b>ROOF DECK INSULATION:</b>								
072 203-0012	Roof deck insulation,basalt rock wool, 25 mm thick	SQM	0.125 Labour Foreman 1.000 Roofer, Composition 1.000 Helper 1.000 Tools Set	17	8	80.000	92.000	86.000	0.100
072 203-0014	Roof deck insulation,basalt rock wool, 50 mm or 76 mm thick	SQM		17	8	70.000	81.000	75.500	0.114
072 203-0018	Roof deck insulation,basalt rock wool,tapered for drainage	CUM		17	8	2.000	3.000	2.500	4.000
072 203-0020	Roof deck insulation,fiberboard low density, 13 mm thick	SQM		17	8	100.000	115.000	107.500	0.080
072 203-0030	Roof deck insulation,fiberboard low density, 25 mm thru 50 mm thick	SQM	0.125 Labour Foreman 1.000 Roofer, Composition 1.000 Helper 1.000 Tools Set	17	8	80.000	92.000	86.000	0.100
072 203-0120	Roof deck insulation,fiberboard high density, 25 mm thick, or 76 mm thick			17	8	80.000	92.000	86.000	0.100
072 203-0200	Roof deck insulation,fiberglass, 17 mm thick thru, 33 mm thick			17	8	100.000	115.000	107.500	0.080
072 203-0700	Roof deck insulation,fiberglass, 50 mm or 80 mm thick			17	8	80.000	92.000	86.000	0.100
072 203-1500	Roof deck insulation,foamglass, 38 mm thick			17	8	80.000	92.000	86.000	0.100
072 203-1530	Roof deck insulation,foamglass, 76 mm thick			17	8	70.000	81.000	75.500	0.114
072 203-1650	Roof deck insulation,perlite, 13 mm thick			17	8	105.000	121.000	113.000	0.076
072 203-1680	Roof deck insulation,perlite, 50 mm thick			17	8	70.000	81.000	75.500	0.114
072 203-1685	Roof deck insulation,perlite, 128 mm thick			17	8	70.000	81.000	75.500	0.114
072 203-1690	Roof deck insulation,perlite tapered for drainage			17	8	2.000	3.000	2.500	4.000
072 203-1900	Roof deck insulation,Extruded Polystyrene,1.05 kg/cm <sup>2</sup> compressive strength,50mm thick			17	8	125.000	144.000	134.500	0.064



# **DIVISION 07 THERMAL & MOISTURE PROTECTION**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
072 203-1932	Roof deck insulation, Extruded Polystyrene, 1.05 kg/cm <sup>2</sup> compressive strength, 100mm thick			17	8	100,000	115,000	107,500	0.083
072 203-1960	Roof deck insulation, Extruded Polystyrene, 4.21 kg/cm <sup>2</sup> compressive strength, 25 mm thick			17	8	145,000	167,000	156,000	0.055
072 203-1962	Roof deck insulation, Extruded Polystyrene, 4.21 kg/cm <sup>2</sup> compressive strength, 50 mm thick			17	8	120,000	138,000	129,000	0.067
072 203-1964	Roof deck insulation, Extruded Polystyrene, 4.21 kg/cm <sup>2</sup> compressive strength, 75 mm thick			17	8	98,000	113,000	105,500	0.082
072 203-1966	Roof deck insulation, Extruded Polystyrene, 4.21 kg/cm <sup>2</sup> compressive strength, 100 mm thick			17	8	95,000	109,000	102,000	0.064
072 203-1968	Roof deck insulation, Extruded Polystyrene, 4.21 kg/cm <sup>2</sup> compressive strength, tapered for drainage	CUM	0.125 Labour Foreman 1,000 Roofer/Compositor 1,000 Tools Set	17	8	3,550	4,000	3,775	2.254
072 203-1970	Roof deck insulation, Extruded Polystyrene, 6.08 kg/cm <sup>2</sup> compressive strength, 50 mm thick	SQM		17	8	120,000	138,000	129,000	0.067
072 203-1976	Roof deck insulation, Extruded Polystyrene, 6.08 kg/cm <sup>2</sup> compressive strength, 100 mm thick			17	8	90,000	104,000	97,000	0.089
072 203-2020	Roof deck insulation, Expanded polystyrene, 25 mm thick			17	8	150,000	173,000	161,500	0.053
072 203-2120	Roof deck insulation, Expanded polystyrene, 100 mm thick			17	8	120,000	138,000	129,000	0.067
072 203-2140	Roof deck insulation, Expanded polystyrene, 150 mm thick			17	8	120,000	138,000	129,000	0.067
072 203-2150	Roof deck insulation, Expanded polystyrene, tapered for drainage	CUM		17	8	3,850	4,000	3,925	2.078
<b>072 400</b>	<b>EXTERIOR INSULATION</b>								
<b>072 401</b>	<b>SANDWICH PANELS</b>								
			<i>See division 061-281</i>						
<b>072 402</b>	<b>EXTERIOR INSULATION FINISH SYSTEM:</b>								
072 402-0130	Exterior insulation finish system, field applied 25 mm thru 100mm thick expanded polystyrene	SQM	0.125 Labour Foreman 3,000 Plasterers 2,000 Plaster Helpers 1,000 Mixing Machine, 0.17 MS	41	8	20,000	23,000	21,500	0.400
072 402-0150	Exterior insulation finish system, heavy duty reinforced expanded polystyrene, 25 mm to 100 mm thick			41	8	15,000	17,000	16,000	0.533
072 402-0170	Exterior insulation finish system, expanded polystyrene, 25 mm to 100 mm thick, including 1.80 kg/m <sup>2</sup> metal lath substrate			41	8	17,000	20,000	18,500	0.471
072 402-0220	Exterior insulation finish system, prefabricated panels with hat channels 64 x 20 mm, and up to 100 mm thick expanded polystyrene		1,000 Struct. Steel Foreman 4,000 Struct. Steel Workers 2,000 Common Laborers 1,000 Equip. Operator(s) 1,000 Hyd. Crane, 23 metric ton 2,000 Power Tools	64	16	135,000	155,000	145,000	0.119
072 402-0260	Exterior insulation finish system, prefabricated panels with 38 mm profile lightweight metal backing, and up to 100 mm thick expanded polystyrene			56	16	135,000	155,000	145,000	0.119
072 402-0440	Exterior insulation finish system, expanded polystyrene, 25 mm to 100 mm thick, including 1.80 kg/m <sup>2</sup> metal lath substrate, more than 1 floor building, add each floor	FLOOR							0.035
<b>072 500</b>	<b>FIREPROOFING</b>								
<b>072 554</b>	<b>SPRAYED:</b>								
072 554-0100	Sprayed mineral fiber or cementitious for fireproofing, incl. tamping & canvas protection 25 mm thick, on flat plate steel	SQM	0.125 Labour Foreman 1,000 Plasterer 1,000 Plaster Helper 1,000 Building Laborer 1,000 Grouting Equipment 1,000 Tools Set	25	16	155,000	178,000	166,500	0.103
072 554-0200	Sprayed mineral fiber or cementitious for fireproofing, incl. tamping & canvas protection 25 mm thick, on flat decking			25	16	135,000	155,000	145,000	0.119
072 554-0400	Sprayed mineral fiber or cementitious for fireproofing, incl. tamping & canvas protection 25 mm thick, on beams			25	16	80,000	92,000	86,000	0.200
072 554-0500	Sprayed mineral fiber or cementitious for fireproofing, incl. tamping & canvas protection 25 mm thick, on corrugated or fluted decks			25	16	66,000	75,000	70,000	0.246
072 554-0700	Sprayed mineral fiber or cementitious for fireproofing, incl. tamping & canvas protection on columns, 30 mm thick			25	16	55,000	63,000	59,000	0.291
072 554-0800	Sprayed mineral fiber or cementitious for fireproofing, incl. tamping & canvas protection on columns, 56 mm thick			25	16	35,000	40,000	37,500	0.457
072 554-1000	Fireproofing, Acoustical sprayed, 25 mm thick, finished, straight work, average	SQM	0.125 Labour Foreman 1,000 Plasterer 1,000 Plaster Helper 1,000 Building Laborer 1,000 Grouting Equipment 1,000 Tools Set	25	16	36,000	41,000	38,500	0.444
072 554-1300	Fireproofing, Acoustical sprayed, 25 mm thick, finished, difficult access, average			25	16	15,000	17,000	16,000	1.067
072 554-1500	Fireproofing, Sprayed intumescent epoxy on wire mesh, 5 mm thick, 1 hour rating, exterior use			25	16	10,000	12,000	11,000	1.861
072 554-1600	Fireproofing, Sprayed magnesium oxychloride, up to 32 kg density, 6 mm thick			25	16	220,000	253,000	236,500	0.077
072 554-1650	Fireproofing, Sprayed magnesium oxychloride, up to 32 kg density, 13 mm thick			25	16	140,000	161,000	150,500	0.114
072 554-1700	Fireproofing, Sprayed magnesium oxychloride, 27.2 kg to 31.6 kg density, 6mm thick			25	16	220,000	253,000	236,500	0.078
072 554-2050	Fireproofing, Vermiculite cement, troweled or sprayed, 13 mm thick			25	16	140,000	161,000	150,500	0.114
<b>073</b>	<b>SHINGLES &amp; ROOFING TILES</b>								
<b>073 100</b>	<b>SHINGLES</b>								
<b>073 101</b>	<b>ALUMINUM SHINGLES</b>								
073 101-0100	Aluminum Shingles, 0.5 mm thick	SQM	0.125 Labour Foreman 1,000 Carpenter 1,000 Helper 1,000 Tools Set	17	8	9,000	10,000	9,500	0.899
<b>073 103</b>	<b>FIBER CEMENT:</b>								



**DIVISION 07: THERMAL & MOISTURE PROTECTION**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
073 103-0200	Fiber cement shakes, 237mm x 400 mm, 24.4 kg/m <sup>2</sup>	SQM	0.125 Labour Foreman 1.000 Carpenter 1.000 Helper 1.000 Tools Set	17	8	24.000	28.000	26.000	0.333
073 103-0400	Fiber cement hexagonal or square shape, 400 mm x 400 mm	"	"	17	8	30.000	35.000	32.500	0.267
<b>073 104</b>	<b>ASPHALT SHINGLES:</b>								
073 104-0250	Asphalt shingles, standard, laminated multi-layered shingles, to 12.70 kg/m <sup>2</sup>	SQM	0.125 Labour Foreman 1.000 Roofer, Composition 1.000 Helper 1.000 Tools Set	17	8	45.000	52.000	48.500	0.178
073 104-0400	Asphalt shingles, premium, laminated multi-layered shingles, 12.70 to 14.65 kg/m <sup>2</sup>			17	8	65.000	83.000	59.000	0.145
073 104-0800	Felt underlayment, 6 Kg. for asphalt shingles			17	8	650.000	748.000	699.000	0.012
073 104-0825	Felt underlayment, 13 Kg. for asphalt shingles			17	8	575.000	661.000	618.000	0.014
<b>073 107</b>	<b>STEEL:</b>								
073 107-0010	Steel shingles, galvanized, 26 gauge or 24 gauge, plain or colored	SQM	0.125 Labour Foreman 1.000 Tile roofer 1.000 Helper 1.000 Tools Set	17	8	24.000	28.000	26.000	0.333
<b>073 108</b>	<b>WOOD:</b>								
073 108-0010	Wood shingles, 400 mm red cedar, 125 mm exposure, on roof	SQM	0.125 Labour Foreman 1.000 Carpenter 1.000 Helper 1.000 Tools Set	17	8	20.000	23.000	21.500	0.400
073 108-0015	Wood shingles, 400 mm red cedar, 125 mm exposure, on roof, pneumatic nailed		0.125 Labour Foreman 1.000 Carpenter 1.000 Pneumatic Nailer 1.000 Helper 1.000 Small compressor 1.000 Circular saw	25	16	28.000	32.000	30.000	0.571
073 108-0200	Wood shingles, 400 mm red cedar singles, 190 mm exposure, on walls		0.125 Labour Foreman 1.000 Tile roofer 1.000 Helper 1.000 Tools Set	17	8	18.000	21.000	19.500	0.444
073 108-1100	Wood, hand-split red cedar shake, 20 mm thick x 600 mm long 255 mm exposure on roof			17	8	22.000	25.000	23.500	0.364
073 108-1200	Wood, hand-split red cedar shake, 455 mm long, 216 mm exposure on roof			17	8	20.000	23.000	21.500	0.400
073 108-1205	Wood, hand-split red cedar shake, 455 mm long, 216 mm exposure on roof, pneumatic nailed	SQM	0.125 Labour Foreman 1.000 Carpenter 1.000 Pneumatic Nailer 1.000 Helper 1.000 Small compressor 1.000 Circular saw	25	16	28.000	32.000	30.000	0.571
<b>073 200</b>	<b>ROOFING TILE</b>								
<b>073 201</b>	<b>ALUMINUM:</b>								
073 201-0010	Aluminum tiles, 0.48 mm thick	SQM	0.125 Labour Foreman 1.000 Carpenter 1.000 Tools Set	8	8	20.000	23.000	21.500	0.400
<b>073 202</b>	<b>CLAY TILE:</b>								
073 202-0600	Roof covering, Clay tiles, severe weathering, including accessories 18.4 pieces / SQM, red	SQM	0.125 Labour Foreman 1.000 Tile roofer 1.000 Helper 1.000 Tools Set	17	8	15.000	17.000	16.000	0.533
073 202-1100	Roof covering, Clay tiles, severe weathering, including accessories 24.20 pieces / SQM machine scored finish, red			17	8	8.000	9.000	8.500	1.000
073 202-1700	Roof covering, Clay tiles, severe weathering, including accessories 14.3 pieces / SQM, smooth finish, red, blue, or green			17	8	10.000	12.000	11.000	0.800
073 202-2550	Roof covering, Clay tiles, severe weathering, including accessories 12.4 pieces / SQM, red	SQM	0.125 Labour Foreman 1.000 Tile roofer 1.000 Helper 1.000 Tools Set	17	8	8.000	9.000	8.500	1.000
<b>073 204</b>	<b>CONCRETE TILE:</b>								
073 204-0020	Concrete tile including installation of accessories, Corrugated, 330 mm x 420 mm, 9.7 ties/m <sup>2</sup> , 46 kg/m <sup>2</sup> nailed to wood deck	SQM	0.125 Labour Foreman 1.000 Tile roofer 1.000 Helper 1.000 Tools Set	17	8	12.000	14.000	13.000	0.667
073 204-0500	Concrete tile, 400 mm x 400 mm, mortar bed			25	8	12.000	14.000	13.000	0.667
073 204-0500	precast pre-insulated concrete tile, 200 mm x 200 mm, mortar bed			25	8	10.000	12.000	11.000	0.800
<b>074</b>	<b>PREFORMED ROOFING &amp; SIDING</b>								
<b>074 100</b>	<b>PREFORMED PANELS</b>								
<b>074 101</b>	<b>ALUMINIUM ROOFING</b>								
074 101-0300	Aluminum roofing, corrugated or ribbed, 0.44 mm thick to 0.8 mm thick, on steel framing	SQM	0.125 Labour Foreman 2.000 Sheet Metal Workers 3.000 Building Laborers 2.00 Power Tools	25	16	100.000	115.000	107.500	0.160
<b>074 103</b>	<b>CURTAIN WALL</b>	<i>See division 089</i>							
<b>074 104</b>	<b>FIBERGLASS:</b>								
074 104-0010	Fiberglass corrugated panels, roofing 2.44 kg/m <sup>2</sup>	SQM	0.125 Labour Foreman 2.000 Sheet Metal Workers 3.000 Building Laborers 2.00 Power Tools	25	16	90.000	104.000	97.000	0.178
074 104-0100	Fiberglass corrugated panels, roofing 3.66 kg/m <sup>2</sup>			25	16	80.000	92.000	86.000	0.200
074 104-0700	Fiberglass corrugated panels on walls 3.66 kg/m <sup>2</sup> fire retardant			25	16	80.000	92.000	86.000	0.200
074 104-1700	Fiberglass sandwich panels, 40 mm thick			25	16	16.000	18.000	17.000	1.000
074 104-1900	Fiberglass sandwich panels, 70 mm thick, panels			25	16	12.000	14.000	13.000	1.333

# **DIVISION 07 THERMAL & MOISTURE PROTECTION**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
074 106	STEEL DECKING	See division 053-104							
074 107	STEEL ROOFING:								
074 107-0010	Steel roofing on steel frame, corrugated or ribbed, galv., 30 ga.	SQM	0.125 Labour Foreman 2.000 Sheet Metal Workers 3.000 Building Laborers 2.00 Power Tools	25	16	100.000	115.000	107.500	0.160
074 107-0300	Steel roofing on steel frame, corrugated or ribbed, galv., 26 ga.			25	16	90.000	104.000	97.000	0.178
074 107-0400	Steel roofing on steel frame, corrugated or ribbed, galv., 24 ga.			25	16	85.000	98.000	91.500	0.188
074 107-0710	Steel roofing on steel frame flat profile, 44 mm locking seams, 255 mm wide, 26 ga.			25	16	90.000	104.000	97.000	0.178
074 107-0715	Steel roofing on steel frame, flat profile, 44 mm locking seams, 255 mm wide, 24 ga.			25	16	85.000	98.000	91.500	0.188
074 107-0720	Steel roofing on steel frame, flat profile, 44 mm locking seams, 255 mm wide, 22 ga.			25	16	80.000	92.000	86.000	0.200
074 107-0740	Steel roofing on steel frame, flat profile, 44 mm locking seams, 300 mm wide, 24 ga.			25	16	85.000	98.000	91.500	0.188
074 107-0750	Steel roofing on steel frame, flat profile, 44 mm locking seams, 300 mm wide, zinc aluminum alloy finish 24 ga.			25	16	85.000	98.000	91.500	0.188
074 107-0840	Steel roofing on steel frame, flat profile, 25mm x 9.5mm batt, 305mm wide 22ga			25	16	80.000	92.000	86.000	0.200
074 107-0870	Steel roofing, Flat profile, 420mm wide, 22 ga.			25	16	80.000	92.000	86.000	0.200
074 200	COMPOSITE PANELS								
074 201	EXPOSED AGGREGATE PANELS:								
074 201-1400	Exposed aggregate panels, fiberglass polymer back-up, medium size aggregate	SQM	0.125 Labour Foreman 4.000 Carpenters 1.000 Equip. Oper. (crane) 1.000 Hyd. Crane, 11 metric ton 2.000 Power Tools	41	24	35.000	40.000	37.500	0.686
074 202	METAL FACING PANELS:								
074 202-0300	Metal facing panels, Field assembled, insulated sandwich wall panels, over 500 m2, 16 ga, aluminum exterior, 38 mm fiberglass and 18 ga galvanized steel interior	SQM	0.125 Labour Foreman 2.000 Sheet Metal Workers 3.000 Building Laborers 2.00 Power Tools	25	16	13.000	15.000	14.000	1.231
074 202-0600	Metal facing panels, Field assembled, insulated sandwich wall panels, over 500 m2, 16 ga galvanized steel both sides			25	16	13.000	15.000	14.000	1.231
074 202-0700	Metal facing panels, Field assembled, insulated sandwich wall panels, over 500 m2, 20 ga. stainless steel exterior face			25	16	13.000	15.000	14.000	1.231
074 202-1200	Metal facing, Factory made sandwich wall panels, acrylic coated, 0.25 mm alum. face on 8 mm plywood core			25	16	20.000	23.000	21.500	0.800
074 202-1400	Metal facing, Factory made sandwich wall panels, 28 ga, porcelain enamel face, insulated cores, hardboard stabilizer and galvanized back, 25 mm or 50 mm thick			25	16	20.000	23.000	21.500	0.800
074 202-3100	Metal facing panels, Factory made sandwich wall panels, 28 ga, porcelain enamel 2 sides 6mm thick mineral fiber core			25	16	20.000	23.000	21.500	0.800
074 600	CLADDING/SIDING								
074 602	ALUMINUM SIDING:								
074 602-0010	Aluminum siding, 0.48 mm thick on steel construction	SQM	0.125 Labour Foreman 2.000 Sheet Metal Workers 3.000 Building Laborers 2.00 Power Tools	33	24	75.000	86.000	80.500	0.320
074 602-0700	Aluminum siding, Industrial type, corrugated, 0.60 mm thick on steel			33	24	75.000	86.000	80.500	0.320
074 602-2750	Aluminum siding, Ribbed 76 mm profile, on steel frame 1.27 mm thick			33	24	75.000	86.000	80.500	0.320
074 602-3100	Aluminum siding, Perforated, corrugated, 14% openings, 0.60 mm thick			33	24	75.000	86.000	80.500	0.320
074 602-3300	Aluminum siding, Ribbed, 76 mm profile, on wood frame, 1.27 mm thick			33	24	95.000	110.000	102.500	0.253
074 602-3630	Flashing for aluminum sidewall or end wall to 1 mm thick	LM		33	24	185.000	213.000	199.000	0.130
074 602-4600	Aluminum siding, Sandwich panels, with 25 mm insulation, single story building	SQM		33	24	24.000	28.000	26.000	1.000
074 602-4900	Aluminum siding, Sandwich panels, with 25 mm insulation, multi story building			33	24	20.000	23.000	21.500	1.200
074 606	STEEL SIDING:								
074 606-0010	Steel siding, Beveled, vinyl coated, 200 mm wide	SQM	0.125 Labour Foreman 1.000 Carpenter 1.000 Helper 1.000 Tools Set	17	8	18.000	21.000	19.500	0.444
074 606-0050	Steel siding, Beveled, vinyl coated, 250 mm wide			17	8	20.000	23.000	21.500	0.400
074 606-0080	Steel siding, Galv. corrugated or ribbed, on steel frame, 30 gauge to 22 gauge		0.125 Labour Foreman 2.000 Sheet Metal Workers 3.000 Building Laborers 2.00 Power Tools	33	16	75.000	86.000	80.500	0.211
074 606-1200	Steel siding, Factory sandwich panel, 26 ga., 25mm insulation, galvanized			33	16	20.000	23.000	21.500	0.800
074 606-2000	Steel siding, Factory sandwich panel, 22 ga., galv., 50 mm insulation, baked enamel exterior			33	16	18.000	21.000	19.500	0.889
074 607	VINYL SIDING:								
074 607-0100	Vinyl siding, Solid PVC panels, 200mm to 250 mm wide	SQM	0.125 Labour Foreman 1.000 Carpenter 1.000 Tools Set	9	8	20.000	23.000	21.500	0.400
074 609	WOOD SIDING, BOARDS:								
074 609-3200	Wood siding, boards cedar bevel, short length 13 mm x 150 mm	SQM	0.125 Labour Foreman 1.000 Carpenter 1.000 Helper 1.000 Power Tool	17	8	20.000	23.000	21.500	0.400
074 609-3300	Wood siding, boards cedar bevel, short lengths 13 mm x 200 mm			17	8	22.000	25.000	23.500	0.364
074 609-3800	Wood siding, boards, cedar, rough sawn, 25 mm x 100 mm			17	8	18.000	21.000	19.500	0.444



DIVISION 07 : THERMAL & MOISTURE PROTECTION									
CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
074 609-4700	Wood siding, boards, redwood, beveled, vertical grain, 13 mm x 100 mm			17	8	16.000	18.000	17.000	0.500
074 609-4800	Wood siding, boards, redwood, beveled, vertical grain, 13 mm x 200 mm		0.125 Labour Foreman 2.000 Sheet Metal Workers 3.000 Building Laborers 2.00 Power Tools	25	16	20.000	23.000	21.500	0.800
074 609-5250	Wood siding, boards, redwood, Tongue & Groove boards, 25 mm x 200 mm			25	16	24.000	28.000	26.000	0.667
074 609-5400	Wood siding, boards, white pine, rough sawn, 25 mm x 200 mm			25	16	22.000	25.000	23.500	0.727
<b>074 611 WOOD PRODUCT SIDINGS:</b>									
074 611-0050	Wood lap siding, hardboard, 11 mm x 200 mm wood grain texture finish	SQM	0.125 Labour Foreman 2.000 Sheet Metal Workers 1.000 Building Laborers 2.00 Power Tools	25	16	70.000	81.000	75.500	0.229
074 611-0100	Wood panel siding, 11 mm thick, smooth, textured or grooved			25	16	75.000	86.000	80.500	0.213
074 611-0700	Wood particle board siding, overlaid, 10 mm thick		0.125 Labour Foreman 2.00 Carpenter 2.00 Power Tools	25	16	80.000	92.000	86.000	0.200
074 611-0900	Wood siding, plywood medium density overlaid, 10 mm thick			25	16	80.000	92.000	86.000	0.200
074 611-1100	Wood siding, plywood, medium density overlaid, 20 mm thick			25	16	75.000	86.000	80.500	0.213
074 611-2800	Wood siding, Plywood, redwood, textured siding, 16 mm thick			25	16	70.000	81.000	75.500	0.229
074 611-3000	Wood siding, Plywood, polyvinyl chloride coated, 10 mm thick			25	16	75.000	86.000	80.500	0.213
<b>075 MEMBRANE ROOFING</b>									
<b>075 100 BUILT-UP ROOFING</b>									
<b>075 101 ASPHALT:</b>									
075 101-0500	Asphalt Coated felt, 13 kg, 18.6 m <sup>2</sup> /roll, not mopped	SQM	0.125 Labour Foreman 1.000 Roofer, Composition 1.000 Helper 1.000 Tools Set	9	8	517.500	595.000	556.250	0.015
075 101-0600	Asphalt Coated felt, roll roofing 40 kg.			9	8	135.000	155.000	145.000	0.059
<b>075 102 BUILT-UP ROOFING:</b>									
075 102-0200	Built-up roofing, Asphalt flood coat with gravel/slag surfacing, base sheet, 3 plies 6 kg asphalt felt, mopped	SQM	0.125 Labour Foreman 1.000 Plasterer 1.000 Plasterer Helper 1.000 Building Laborer 1.000 Grouting Equipment	25	8	155.000	178.000	166.500	0.052
075 102-0500	Built-up roofing, Asphalt flood coat with gravel/slag surfacing, base sheet, 4 plies 6 kg asphalt felt, mopped			25	8	135.000	155.000	145.000	0.059
075 102-2200	Built-up roofing, Asphalt flood coat, smooth surface, asphalt base sheet & 3 plies 6 kg asphalt felt, mopped			25	8	170.000	196.000	183.000	0.047
075 102-2700	Built-up roofing, Asphalt flood coat, smooth surface, asphalt base sheet & 4 plies 6 kg asphalt felt	SQM	0.125 Labour Foreman 1.000 Plasterer 1.000 Plasterer Helper 1.000 Building Laborer 1.000 Grouting Equipment	25	8	170.000	196.000	183.000	0.047
075 102-3800	Built-up roofing, coal tar pitch with coated glass fiber base sheet and 4 plies glass fiber felt, mopped			25	8	135.000	155.000	145.000	0.059
<b>075 103 CANTS:</b>									
075 103-0010	Cants, 100 mm x 100 mm treated timber, cut diagonally	SQM	0.125 Labour Foreman 1.000 Roofer Composition 1.000 Tools Set	9	8	80.000	92.000	86.000	0.100
<b>075 104 FELT:</b>									
075 104-0010	Felt glass fibered, 6 kg, no mopping	SQM	0.125 Labour Foreman 1.000 Roofer Composition 1.000 Helper 1.000 Tools Set	17	8	517.500	595.000	556.250	0.015
075 104-0011	Felt glass fibered, 22 kg, no mopping			17	8	517.500	595.000	556.250	0.015
075 104-0900	Asphalt felt 6 kg 37.2 m <sup>2</sup> /roll, no mopping			17	8	517.000	595.000	556.000	0.015
<b>075 200 PREPARED ROLL ROOFING</b>									
<b>075 204 ROLL ROOFING:</b>									
075 204-0200	Roll roofing, Asphalt, mineral surface, 1 ply 6 kg., organic felt, 1 ply mineral surfaced, selvage roofing, lap 480 mm, mopped	SQM	0.125 Labour Foreman 1.000 Plasterer 1.000 Plasterer Helper 1.000 Building Laborer 1.000 Grouting Equipment	25	8	185.000	213.000	199.000	0.043
075 204-0400	Roll roofing, Asphalt, mineral surface, 3 plies glass fiber felt, 1 ply mineral surfaced, selvage roofing, lap 480 mm, mopped			25	8	175.000	201.000	188.000	0.046
<b>075 300 ELASTOMERIC ROOFING</b>									
<b>075 301 ELASTOMERIC ROOFING: For Elastomeric waterproofing, see division 071-102</b>									
075 301-0300	Elastomeric roofing, Hypalon neoprene fluid applied, 0.5 mm thick, not-reinforced.	SQM	0.125 Labour Foreman 1.000 Plasterer 1.000 Plasterer Helper 1.000 Building Laborer 1.000 Grouting Equipment	25	8	80.000	92.000	86.000	0.100
075 301-0900	Elastomeric roofing, 5 coat neoprene deck, 1.5 mm thick			25	8	30.000	35.000	32.500	0.267
075 301-1000	Elastomeric roofing, Neoprene membrane, 1.6 mm thick			25	8	90.000	104.000	97.000	0.089
075 301-1300	Elastomeric roofing, Vinyl plastic traffic deck, sprayed, 0.05 to 0.10 mm thick			25	8	50.000	58.000	54.000	0.160
075 301-1700	Elastomeric roofing, Polyurethane spray-on with 0.5 mm silicone rubber coating applied, 25 mm thick, average labor			25	8	60.000	69.000	64.500	0.133
075 301-1900	Elastomeric roofing, Polyurethane spray-on with 0.5 mm silicone rubber coating applied 50 mm thick, average labor			25	8	45.000	52.000	48.500	0.178



# **DIVISION 07 - THERMAL & MOISTURE PROTECTION**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
075 301-2100	Elastomeric roofing, Polyurethane spray-on with 0.5 mm silicone rubber coating applied 76 mm thick, average labor			25	B	35.000	40.000	37.500	0.229
<b>075 302</b>	<b>SINGLE-PLY MEMBRANE:</b>								
075 302-3500	Single-ply membrane, Ethylene propylene diene monomer (EPDM), 1 mm, 1.37 kg/m <sup>2</sup> loose-laid & ballasted with stone (50 kg/m <sup>2</sup> )	SQM	1 Roofer Foreman 2 Roofers Composition 2 Roofer Helpers 1 Application Equipment	40	B	350.000	403.000	376.500	0.023
075 302-3700	Single-ply membrane, Ethylene propylene diene monomer (EPDM), 1 mm, 1.37 kg/m <sup>2</sup> partially adhered & ballasted with stone (50 kg/m <sup>2</sup> )			40	B	245.000	282.000	263.500	0.033
075 302-3800	Single-ply membrane, Ethylene propylene diene monomer (EPDM), 1 mm, 1.37 kg/m <sup>2</sup> , fully adhered with adhesive & ballasted with stone (50 kg/m <sup>2</sup> )			40	B	180.000	207.000	193.500	0.044
075 302-4200	Single-ply membrane, Ethylene propylene diene monomer (EPDM), 1.4mm, 1.71 kg/m <sup>2</sup> loose-laid & ballasted with stone (49 kg/m <sup>2</sup> ), partially adhered			40	B	245.000	282.000	263.500	0.033
075 302-4300	Single-ply membrane, Ethylene propylene diene monomer (EPDM), 1.4mm, 1.71 kg/m <sup>2</sup> loose-laid & ballasted with stone (49 kg/m <sup>2</sup> ), fully adhered with adhesive			40	B	180.000	207.000	193.500	0.044
075 302-7500	Single-ply membrane, Polyisobutylene (PIB), 3mm, 2.78 kg/m <sup>2</sup> , partially adhered with adhesive			40	B	245.000	282.000	263.500	0.033
075 302-7800	Single-ply membrane, Polyisobutylene (PIB), 3mm, 2.78 kg/m <sup>2</sup> , partially adhered with hot asphalt			40	B	245.000	282.000	263.500	0.033
075 302-8200	Single-ply membrane, Polyvinyl chloride (PVC), heat welded seams, reinforced, 1.2mm, 1.61 kg/m <sup>2</sup> loose-laid & ballasted with stone/gravel (58.6 kg/m <sup>2</sup> )			40	B	350.000	403.000	376.500	0.023
075 302-8800	Single-ply membrane, Polyvinyl chloride (PVC), heat welded seams, reinforced, 1.2mm, 1.61 kg/m <sup>2</sup> , partially adhered with mechanical fasteners & ballasted with stone/gravel (58.6 kg/m <sup>2</sup> )			40	B	245.000	282.000	263.500	0.033
075 302-8850	Single-ply membrane, Polyvinyl chloride (PVC), heat welded seams, reinforced, 1.2mm, 1.61 kg/m <sup>2</sup> , fully adhered with adhesive & ballasted with stone/gravel (58.6 kg/m <sup>2</sup> )			40	B	180.000	207.000	193.500	0.044
075 302-8860	Single-ply membrane, Polyvinyl chloride (PVC), heat welded seams, reinforced, 1.5mm, 2.1 kg/m <sup>2</sup> loose-laid & ballasted with stone/gravel (58.6 kg/m <sup>2</sup> ), partially adhered with mechanical fasteners			40	B	350.000	403.000	376.500	0.023
075 302-8890	Single-ply membrane, Polyvinyl chloride (PVC), heat welded seams, reinforced, 1.5mm, 2.1 kg/m <sup>2</sup> loose-laid & ballasted with stone/gravel (58.6 kg/m <sup>2</sup> ), fully adhered with adhesive			40	B	180.000	207.000	193.500	0.044
<b>075 350</b>	<b>MODIFIED BITUMIN ROOFING:</b>								
<b>075 352</b>	<b>MODIFIED BITUMEN:</b>								
075 352-0100	Modified Bitumen roofing, 3mm, 4.49 kg/m <sup>2</sup> , fully adhered with torch welding	SQM	1 Roofer Foreman 2 Roofers Composition 2 Roofer Helpers 1 Application Equipment	40	B	200.000	230.000	215.000	0.040
075 352-0200	Modified Bitumen roofing, 4mm, 4.00 kg/m <sup>2</sup> loose-laid & ballasted with gravel (20 kg/m <sup>2</sup> )	SQM	1 Roofer Foreman 2 Roofers Composition 2 Roofer Helpers 1 Application Equipment	40	B	210.000	242.000	226.000	0.038
075 352-0400	Modified Bitumen roofing, 4 mm, 4.00 kg/m <sup>2</sup> , partially adhered with torch welding & ballasted with gravel (20 kg/m <sup>2</sup> )			40	B	180.000	207.000	193.500	0.044
075 352-0500	Modified Bitumen roofing, 4mm, 4.00 kg/m <sup>2</sup> , fully adhered with torch welding & ballasted with gravel (20 kg/m <sup>2</sup> )			40	B	140.000	161.000	150.500	0.057
075 352-0700	Modified Bitumen roofing, 4mm, 3.8 to 5.86 kg/m <sup>2</sup> , with asphalt emulsion coating, loose laid & ballasted with stone/gravel 50 kg/ SQM			40	B	200.000	230.000	215.000	0.040
<b>076</b>	<b>FLASHING &amp; SHEET METAL</b>								
<b>076 100</b>	<b>SHEET METAL ROOFING</b>								
<b>076 101</b>	<b>COPPER ROOFING:</b>								
076 101-0010	Copper roofing, batten seam, over 100 m <sup>2</sup> , 454 gram, 6.34 kg/m <sup>2</sup>	SQM	0.125 Labour Foreman 1.000 Sheet Metal Worker 1.000 Helper 1.000 Tools Set	17	B	7.000	8.000	7.500	1.143
076 101-0300	Copper roofing, batten seam, over 100 m <sup>2</sup> , 567 gram, 7.81 kg/m <sup>2</sup>			17	B	6.000	7.000	6.500	1.333
076 101-0400	Copper roofing, standing seam, over 100 m <sup>2</sup> , 567 gram, 7.32 kg/m <sup>2</sup>			17	B	7.000	8.000	7.500	1.143
076 101-1000	Copper roofing, flat seam, over 100 m <sup>2</sup> , 567 gram, 7.08 kg/m <sup>2</sup>			17	B	7.000	8.000	7.500	1.143
076 101-1200	Copper roofing, batten seam, less than 100 m <sup>2</sup> and in restricted areas, 567 gram, 7.08 kg/m <sup>2</sup>			17	B	4.000	5.000	4.500	2.000
<b>076 102</b>	<b>LEAD ROOFING:</b>								
076 102-0010	Lead roofing, 24.40 kg/m <sup>2</sup> , batten seam	SQM	0.125 Labour Foreman 1.000 Sheet Metal Worker 1.000 Tools Set	9	B	8.000	9.000	8.500	1.000
076 102-0100	Lead roofing, 24.40 kg/m <sup>2</sup> , flat seam			9	B	9.000	10.000	9.500	0.859
<b>076 103</b>	<b>MONEL ROOFING:</b>								
076 103-0100	Monel roofing, batten seam, over 100 m <sup>2</sup> , 0.5 mm thick	SQM	0.125 Labour Foreman 1.000 Sheet Metal Worker 1.000 Tools Set	9	B	8.000	9.000	8.500	1.000
076 103-0300	Monel roofing, standing seam, over 100 m <sup>2</sup> , 0.5 mm thick			9	B	9.000	10.000	9.500	0.859
076 103-0600	Monel roofing, flat seam, over 100 m <sup>2</sup> , 0.46 mm thick			9	B	10.000	12.000	11.000	0.610
<b>076 104</b>	<b>STAINLESS STEEL ROOFING:</b>								
076 104-0050	Stainless steel roofing, type 304, batten seam, 26 gauge	SQM	0.125 Labour Foreman 1.000 Sheet Metal Worker 1.000 Tools Set	9	B	9.000	10.000	9.500	0.859
076 104-0100	Stainless steel roofing, type 304, batten seam, 26 gauge			9	B	7.500	9.000	8.250	1.067
<b>076 105</b>	<b>ZINC</b>								
076 105-0100	Zinc copper alloy roofing, batten seam 0.7mm thick	SQM	0.125 Labour Foreman 1.000 Sheet Metal Worker 1.000 Tools Set	9	B	8.000	9.000	8.500	1.000
076 105-0400	Zinc copper alloy roofing, batten seam 1 mm thick			9	B	6.500	7.000	6.750	1.231
<b>076 200</b>	<b>SHEET METAL FLASH &amp; TRIM</b>								



# **DIVISION 07 :THERMAL & MOISTURE PROTECTION**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
<b>076 201</b>	<b>DOWNSPOUTS:</b>								
076 201-0300	Downspouts aluminum 50 mm x 76 mm,0.50 mm thick	LM	0.125 Labour Foreman 1.000 Sheet Metal Worker 1.000 Tools Set	9	A	45.000	52.000	48.500	0.178
076 201-0400	Downspouts aluminum 76 mm x 100 mm,enameled, 0.60mm thick			9	B	35.000	40.000	37.500	0.229
076 201-0700	Downspouts,round,corrugated aluminum,100 mm diameter, 0.60 mm thick			9	B	35.000	40.000	37.500	0.229
076 201-0900	Aluminum wire strainer,round upto 100 mm,or rectangular 76 mm x 100 mm.			9	B	120.000	138.000	129.000	0.067
076 201-1500	Downspouts,copper,round,454 gram,76 mm diameter			9	B	45.000	52.000	48.500	0.178
076 201-1800	Downspouts,copper,round,454 gram,100 mm diameter (4")			9	B	35.000	40.000	37.500	0.229
076 201-1900	Downspouts,copper,round, 454 gram, 127 mm diameter (5")			9	B	30.000	35.000	32.500	0.267
076 201-2700	Copper wire strainer,rectangular 76x100 mm or round 100 mm.	EA		9	B	110.000	127.000	118.500	0.073
076 201-3400	Copper wire strainer,round 127mm			9	B	110.000	127.000	118.500	0.073
076 201-4900	Downspouts,steel,galvanized,round,corrugated,100 mm diam., 28 ga	LM	0.125 Labour Foreman 1.000 Sheet Metal Worker 1.000 Helper 1.000 Tools Set	17	B	35.000	40.000	37.500	0.229
076 201-5400	Downspouts,steel,galvanized,round,corrugated,150 mm diam., 28 ga			17	B	25.000	29.000	27.000	0.320
076 201-5700	Downspouts,steel,galvanized, rectangular, corrugated or plain,28 ga., 76mm x 100 mm			17	B	35.000	40.000	37.500	0.229
076 201-6600	Galvanized steel wire strainer,rectangular 76 x 100 mm or round 100 mm	EA		17	B	110.000	127.000	118.500	0.073
076 201-7300	Galvanized steel wire strainer,round 150mm			17	B	90.000	104.000	97.000	0.089
076 201-7500	Downspouts,steel pipe,black,extra heavy,100 mm diameter	LM		17	B	4.500	5.000	4.750	1.778
076 201-7600	Downspouts,steel pipe,black,extra heavy,150 mm diameter			17	B	4.000	5.000	4.500	2.000
076 201-7800	Downspouts,stainless steel tubing,schedule 5, 50 mm x 76 mm or 76 mm diam.			17	B	40.000	46.000	43.000	0.200
076 201-8100	Downspouts,stainless steel tubing,schedule 5, 100 mm x 127 mm or 127 mm diameter			17	B	30.000	35.000	32.500	0.267
076 201-8200	Downspouts, vinyl, rectangular, 50 mm x 76 mm or round 64 mm			17	B	50.000	58.000	54.000	0.180
<b>076 202</b>	<b>DRIP EDGE:</b>								
076 202-0300	Drip edge,aluminum, 0.40 mm thick, 710 mm wide	LM	0.125 Labour Foreman 1.000 Carpenter 1.000 Helper 1.000 Tools Set	17	B	25.000	29.000	27.000	0.320
076 202-0400	Drip edge,steel,galvanized,upto 200 mm wide			17	B	85.000	98.000	91.500	0.094
<b>076 203</b>	<b>ELBOW:</b>								
076 203-0010	Elbow aluminum, 50 mm x 76 mm	EA	0.125 Labour Foreman 1.000 Sheet Metal Worker 1.000 Helper 1.000 Tools Set	17	B	80.000	92.000	86.000	0.100
076 203-0600	Elbow copper, 454 gram round,76 mm diameter			17	B	80.000	92.000	86.000	0.100
076 203-0900	Elbow copper, 454 gram round,127 mm diameter			17	B	80.000	92.000	86.000	0.100
076 203-1300	Elbow vinyl, 64 mm diameter			17	B	80.000	92.000	86.000	0.100
076 203-1400	Elbow Tee, Y Junction Vinyl 64 mm dia.			17	B	60.000	69.000	64.500	0.133
<b>076 204</b>	<b>FLASHING:</b>								
076 204-0010	Flashing aluminum,mill finish, 0.30 mm thick to 1 mm thick	SQM	0.125 Labour Foreman 1.000 Sheet Metal Worker 1.000 Tools Set	9	B	10.000	12.000	11.000	0.800
076 204-1600	Flashing copper, 454 gram,sheets			9	B	8.000	9.000	8.500	1.000
076 204-2500	Flashing copper, 907 gram,sheets			9	B	7.000	8.000	7.500	1.143
076 204-4300	Flashing copper-clad stainless steel, 0.38 mm thick			9	B	8.000	9.000	8.500	1.000
076 204-5000	Flashing fabric,asphalt-saturated cotton, utility grade		0.125 Labour Foreman 1.000 Roofer,Composition 1.000 Helper 1.000 Tools Set	17	B	20.000	23.000	21.500	0.400
076 204-6200	Flashing lead-coated copper,fabric-backed, 142 gram.		0.125 Labour Foreman 1.000 Sheet Metal Worker 1.000 Helper 1.000 Tools Set	17	B	20.000	23.000	21.500	0.400
076 204-7300	Flashing polyvinyl chloride,black 0.25 mm thick to 1 mm thick		0.125 Labour Foreman 1.000 Roofer,Composition 1.000 Helper 1.000 Tools Set	17	B	18.000	21.000	19.500	0.444
076 204-8100	Flashing rubber,butyl, 0.8 mm thick to 2 mm thick			17	B	18.000	21.000	19.500	0.444
076 204-8500	Flashing shower pan,bituminous membrane 198 gram, or 3 ply copper and fabric, 85 gram		0.125 Labour Foreman 1.000 Sheet Metal Worker 1.000 Tools Set	9	B	9.000	10.000	9.500	0.889
076 204-8900	Flashing stainless steel sheets, 32 ga to 24 ga.			9	B	10.000	12.000	11.000	0.800
<b>076 205</b>	<b>GUTTERS:</b>								
076 205-0010	Gutters aluminum, 127 mm box, 0.7 mm thick	LM	0.125 Labour Foreman 1.000 Sheet Metal Worker 1.000 Helper 1.000 Tools Set	17	B	25.000	29.000	27.000	0.320
076 205-0700	Gutters copper, half round, 454 gram, 150 mm wide			17	B	25.000	29.000	27.000	0.320
076 205-1500	Gutters lead coated copper, half round stock,150 mm wide			17	B	25.000	29.000	27.000	0.320
076 205-2100	Gutters stainless steel,half round or box, 28 ga.,127 mm wide			17	B	25.000	29.000	27.000	0.320
076 205-2400	Gutters steel,galv.,half round or box,stock 127 mm wide			17	B	25.000	29.000	27.000	0.320

# **DIVISION 07 :THERMAL & MOISTURE PROTECTION**

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076 205-3000	Gutters vinyl, 127 mm wide	LM	0.125 Labour Foreman 1.000 Carpenter 1.000 Helper 1.000 Tools Set	17	B	22.000	25.000	23.500	0.364
<b>076 206</b>	<b>GUTTER GUARD:</b>								
076 206-0010	Gutter guard 150 mm wide strip, aluminum or vinyl mesh	LM	0.125 Labour Foreman 1.000 Carpenter 1.000 Helper 1.000 Tools Set	17	B	110.000	127.000	118.500	0.073
<b>076 210</b>	<b>REGLET:</b>								
076 210-0010	Reglet aluminum,copper,galvanized or stainless steel,in concrete parapet	LM	0.125 Labour Foreman 1.000 Carpenter 1.000 Helper 1.000 Tools Set	17	B	55.000	63.000	59.000	0.145
<b>076 217</b>	<b>SOFFIT:</b>								
076 217-0010	Soffit aluminum, 0.5 mm thick	SQM	0.125 Labour Foreman 1.000 Carpenter 1.000 Helper 1.000 Tools Set	17	B	15.000	17.000	16.000	0.533
076 217-0100	Soffit baked enamel on steel,16 or 18 gauge			17	B	7.500	9.000	8.250	1.067
076 217-3300	Soffit polyvinyl chloride, solid or perforated			17	B	18.000	21.000	19.500	0.444
<b>077</b>	<b>ROOF SPECIALTIES &amp; ACCESSORIES</b>								
<b>077 100</b>	<b>PREFAB ROOF SPECIALTIES</b>								
<b>077 103</b>	<b>EXPANSION JOINT:</b>								
077 103-0010	Expansion joint, butyle 1.6 mm thick, 735 mm wide	LM	0.125 Labour Foreman 1.000 Roofer 1.000 Helper 1.000 Tools Set	17	B	40.000	46.000	43.000	0.200
077 103-0400	Expansion joint, butyle on neoprene center with foam insulation, metal flanges, for openings upto 200 mm	LM	0.125 Labour Foreman 1.000 Roofer 1.000 Helper	17	B	40.000	46.000	43.000	0.200
077 103-1900	Expansion joint,neoprene,double seal type,with thick center, 115 mm wide			17	B	30.000	35.000	32.500	0.267
077 103-1950	Expansion joint,polyethylene bellows,with galvanized steel flanges			17	B	25.000	29.000	27.000	0.320
077 103-2000	Roof expansion joint,with extruded aluminum cover, 50 mm		0.125 Labour Foreman 1.000 Sheet Metal Worker 1.000 Helper 1.000 Tools Set	17	B	30.000	35.000	32.500	0.267
077 103-2100	Roof expansion joint,plastic curbs,foam center		0.125 Labour Foreman 1.000 Roofer 1.000 Helper 1.000 Tools Set	17	B	20.000	23.000	21.500	0.400
077 103-2500	Roof to wall expansion joint,with extruded aluminum cover		0.125 Labour Foreman 1.000 Sheet Metal Worker 1.000 Helper 1.000 Tools Set	17	B	25.000	29.000	27.000	0.320
077 103-2800	Wall expansion joint,closed cell foam on PVC cover 300 mm wide		0.125 Labour Foreman 1.000 Roofer 1.000 Helper 1.000 Tools Set	17	B	25.000	29.000	27.000	0.320
<b>077 104</b>	<b>FASCIA:</b>								
077 104-0300	Fascia aluminum or steel galvanized, no furring,average	SQM	0.125 Labour Foreman 1.000 Sheet Metal Worker 1.000 Tools Set	B	B	9.000	10.000	9.500	0.889
<b>077 105</b>	<b>GRAVEL STOP:</b>								
077 105-0300	Gravel stop aluminum,150 mm face height 1 mm thick	LM	0.125 Labour Foreman 1.000 Sheet Metal Worker 1.000 Tools Set	B	B	30.000	35.000	32.500	0.267
077 105-1350	Gravel stop,galv.steel, 24 ga, upto 150 mm high with continuous cleat			B	B	30.000	35.000	32.500	0.267
077 105-1600	Gravel stop,polyvinyl chloride, 230 mm face height			B	B	30.000	35.000	32.500	0.267
077 105-1900	Gravel stop,stainless steel, 24 ga or 20 ga, 300 mm face height			B	B	20.000	23.000	21.500	0.400
<b>077 200</b>	<b>ROOF ACCESSORIES:</b>								
<b>077 204</b>	<b>CEILING HATCHES:</b>								
077 204-0010	Ceiling hatches, 760 mm x 760 mm,single leaf,steel frame & cover	EA	0.125 Labour Foreman 2.000 Sheet Metal Workers 2.000 Building Laborers 2.000 Power Tools	33	16	8.000	9.000	8.500	2.000
<b>077 205</b>	<b>ROOF DRAINS</b>	See division 151-125							
<b>077 206</b>	<b>ROOF HATCHES:</b>								
077 206-0500	Roof hatches with 25 mm fiberglass insul., 760 mm x 915 mm,aluminum,or galvanized steel curb and cover	EA	0.125 Labour Foreman 2.000 Sheet Metal Workers 3.000 Building Laborers 2.000 Power Tools	41	16	8.000	9.000	8.500	2.000
077 206-1200	Roof hatches with 25 mm fiberglass insul., 760 mm x 1370 mm, & with aluminum or galvanized steel curb and cover			41	16	5.000	6.000	5.500	3.200
077 206-1200	Roof hatches, 760 mm x 2440 mm,aluminum or galvanized steel curb and cover			41	16	5.000	6.000	5.500	3.200
<b>077 208</b>	<b>SMOKE VENT:</b>								
077 208-0100	Smoke vent,insulated, 1220 mm x 1220 mm,aluminum or galvanized steel cover & frame	EA	0.125 Labour Foreman 2.000 Sheet Metal Workers 3.000 Building Laborers 2.000 Power Tools	41	16	10.000	12.000	11.000	1.600
077 208-0300	Smoke vent,insulated, 1220 mm x 2400 mm,aluminum or galvanized steel cover & frame			41	16	7.000	8.000	7.500	2.286
<b>077 210</b>	<b>ROOF VENTS:</b>								
077 210-0010	Roof vents mushroom for built-up roofs,aluminum or PVC, 150 mm high	EA	0.125 Labour Foreman 1.000 Roofer,Composition 1.000 Tools Set	B	B	20.000	23.000	21.500	0.400



**DIVISION 07 : THERMAL & MOISTURE PROTECTION**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	CREW HOURS	CREW EQUIP.	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
<b>078</b>	<b>SKYLIGHTS</b>								
<b>078 100</b>	<b>PLASTIC SKYLIGHTS</b>								
<b>078 101</b>	<b>SKYLIGHT:</b>								
078 101-0300	Skylight, plastic roof domes, curb mounted, with 100 mm insulated curb & "L" frames, nominal size under 1.00 m2, double	SQM	0.125 Labour Foreman 2.000 Sheet Metal Workers 3.000 Building Laborers 2.000 Power Tools	41	16	5.000	6.000	5.500	3.200
078 101-0400	Skylight, plastic roof domes, curb mounted, with 100 mm insulated curb & "L" frames, nominal size 1.00 to 2 m2, double			41	16	6.000	7.000	6.500	2.667
078 101-1200	Skylight, plastic roof domes, curb mounted, with 100 mm insulated curb & "L" frames, nominal size under 2 to 6 m2, double			41	16	18.000	21.000	19.500	0.889
078 101-1900	Skylight, plastic roof domes, curb mounted, with 230 mm insulated curb & "L" frames, nominal size under 2 to 6 m2, double			41	16	18.000	21.000	19.500	0.889
078 101-2150	Skylight, ventilating insulated plexiglass dome with insulated curb mounting size 1320 mm x 1320 mm	EA		41	16	10.000	12.000	11.000	1.600
078 101-2170	Skylight, ventilating insulated plexiglass dome with insulated curb mounting size 915 mm x 1320 mm	"		41	16	8.000	9.000	8.500	2.000
078 101-2400	Skylight, sandwich panel, fiberglass for walls 40 mm thick upto 25 SQM	SQM		41	16	16.000	18.000	17.000	1.000
078 101-2500	Skylight, sandwich panel, fiberglass for walls 40 mm thick more than 25 SQM	SQM	0.125 Labour Foreman 2.000 Sheet Metal Workers 3.000 Building Laborers 2.000 Power Tools	41	16	20.000	23.000	21.500	0.800
078 101-2700	Skylight, sandwich panel, fiberglass for roofs 70 mm thick upto 25 SQM	"		41	16	24.000	28.000	26.000	0.667
078 101-2800	Skylight, sandwich panel, fiberglass for roofs 70 mm thick more than 25 SQM	SQM	0.125 Labour Foreman 2.000 Sheet Metal Workers 3.000 Building Laborers 2.000 Power Tools	41	16	27.000	31.000	29.000	0.593
<b>078 200</b>	<b>METAL FRAMED SKYLIGHTS</b>								
<b>078 202</b>	<b>SKYROOFS:</b>								
078 202-0010	Skyroofs translucent panels, 70 mm thick	SQM HORI- ZONTAL	0.125 Labour Foreman 2.000 Sheet Metal Workers 3.000 Building Laborers 2.000 Power Tools	41	16	30.000	35.000	32.500	0.533
078 202-0300	Skyroofs continuous vaulted, semi-circular, to 6 m wide, double glazed	"		41	16	10.000	12.000	11.000	1.800
078 202-0900	Skyroofs continuous vaulted, motorized opening type, single glazed, full opening	SQM HORI- ZONTAL	0.125 Labour Foreman 2.000 Sheet Metal Workers 1.000 Electrician 3.000 Building Laborers 2.000 Power Tools	49	16	8.000	9.000	8.500	2.000
078 202-0300	Skyroofs pyramid type units, self-supporting, to 9 m clear opening, square or circular, single glazed average		0.125 Labour Foreman 2.000 Sheet Metal Workers 3.000 Building Laborers 2.000 Power Tools	41	16	16.000	18.000	17.000	1.000
078 202-1500	Skyroofs grid type, 1.2 to 3 m modules, double glazed, average			41	16	12.000	14.000	13.000	1.333
<b>078 400</b>	<b>GLASS BLOCK SKYLIGHTS</b>								
<b>078 402</b>	<b>PREFABRICATED:</b>								
078 402-0010	Prefabricated glass block with metal frame average	SQM	0.125 Labour Foreman 2.000 Sheet Metal Workers 3.000 Building Laborers 2.000 Power Tools	41	16	15.000	17.000	16.000	1.067
<b>079</b>	<b>JOINT SEALERS</b>								
<b>079 100</b>	<b>JOINT FILLERS &amp; GASKETS</b>								
<b>079 102</b>	<b>CONTROL JOINTS</b>								
	See division 041-508								
<b>079 204</b>	<b>SEALANTS &amp; CAULKINGS</b>								
<b>079 204</b>	<b>CAULKING AND SEALANTS:</b>								
079 204-0030	Acoustical sealant, elastomeric, backer rod, polyethylene, 6 mm to 25 mm diameter	LM	0.125 Labour Foreman 1.000 Bricklayer 1.000 Tools Set	8	8	110.000	127.000	118.500	0.073
079 204-0600	Caulking compound, oil base, bulk, in place 6 mm x 13 mm			9	8	60.000	70.000	65.000	0.133
079 204-0800	Caulking compound, oil base, bulk, in place 20 mm x 25 mm			9	8	60.000	70.000	65.000	0.133
079 204-1400	Caulking & Sealant, butyl base, bulk in place 13 mm x 13 mm			9	8	60.000	70.000	65.000	0.133
079 204-2300	Caulking and sealant, polysulfide compounds, in place, 6 mm x 6 mm			9	8	60.000	70.000	65.000	0.133
079 204-3000	Caulking and sealant, polysulfide compounds, in place, 25 mm x 13 mm			8	8	35.000	40.000	37.500	0.229
079 204-3200	Caulking and sealant, polyurethane, in place, 6 mm x 6 mm			9	8	40.000	48.000	43.000	0.200
079 204-3800	Caulking and sealant, polyurethane, in place, 20 mm x 10 mm			9	8	30.000	35.000	32.500	0.267
079 204-3900	Caulking and sealant, polyurethane, in place, 25 mm x 13 mm			9	8	30.000	35.000	32.500	0.267
079 204-4400	Sealant, neoprene gaskets, closed cell, adhesive, 3 mm x 10 mm			9	8	60.000	69.000	64.500	0.133
079 204-4800	Sealant, neoprene gaskets, closed cell, adhesive, 19 mm x 38 mm			9	8	45.000	52.000	48.500	0.178
079 204-6000	Sealant, PVC tape, foam adhesive 3 mm x 13 mm			9	8	45.000	52.000	48.500	0.178





## الهدف:

التحكم بالوقت  
التحكم بالميزانية  
التحكم بالتكلفة

- إدارة المشاريع

- مراقبة قبل التصميم

- مراقبة التصميم

- مراقبة التنفيذ

- مراقبة التصميم

- مراقبة التنفيذ

- إشراف

- دراسات هندسية



A decorative geometric pattern, possibly a traditional Islamic or Arabesque design, featuring interlocking lines and star shapes. It is located in the upper right corner of the page, partially overlapping a white diagonal shape.

# Division 8

## Doors & Windows





## **Division 8.. Door & Windows..**

### **Estimating Tips:**

#### **081 Metal Doors & Frames:**

Most metal doors and frames look alike, but there may be significant differences among them. When estimating these items be sure to choose the line items that most closely compares to the specification or door schedule requirements regarding:

- a) type of metal
- b) metal gauge
- c) door core material
- d) fire rating
- e) finish

Most of the items covered under this division are furnished by local manufacturers or distributors and carpenters set them at job site. Usually sash & doors are provided with glazing. Contractor are advised to check this item to prevent duplication of work Curtain walls are usually let to specialized sub-contractors. Estimator shall focus on material schedules.

#### **082 Wood & Plastic Doors:**

Some doors usually in institutional buildings are veneered on all surfaces with plastic laminate. Wood and plastic doors vary considerably in price. The primary determinant is the veneer material, which is bonded under pressure.

#### **083 Special Doors:**

There are many varieties of special doors, and they are usually priced per each. Add frames, hardware or operators required for a complete installation. Tin clad fire doors, overhead, coiling doors & grilles, folding, freezer and refrigerator, air curtain garage and entrance sliding doors and others are classified as special doors.

#### **087 Hardware:**

Hardware costs add considerably to the cost of a door, usually hardware schedules set up is included in specifications rather than shown on drawings.



# **DIVISION 08 :DOORS & WINDOWS**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVERG.	AVRG. E.H.
<b>081</b>	<b>METAL DOORS &amp; FRAMES</b>						
<b>081 100</b>	<b>STEEL DOORS &amp; FRAMES</b>						
<b>081 103</b>	<b>COMMERCIAL STEEL DOORS:</b>						
	<b>"Hardware not included"</b>						
081 103-0020	Commercial Steel Door,Flush ,full panel,Hollow core,35 mm thick, 20 ga., 610 mm x 2035 mm,hardware & frame not included	EA	0.125 Skilled Foreman 2.00 Carpenters 1.00 Helper 2.00 Power Tools	19.000	22.000	20.500	0.842
081 103-0060	Commercial Steel Door,Flush ,full panel,Hollow core,35 mm thick,20 ga., 915 mm x 2035 mm,hardware & frame not included			16.000	18.000	17.000	1.000
081 103-0100	Commercial Steel Door,Flush ,full panel,Hollow core,35 mm thick,20 ga., 915mm x 2135 mm,hardware & frame not included			16.000	18.000	17.000	1.000
081 103-0400	Commercial Steel Door,Flush ,Hollow core,Half Glass,20 ga.,915 mm x 2135 mm,hardware & frame not included			16.000	18.000	17.000	1.000
081 103-1020	Commercial Steel Door,Flush,full panel,Hollow core,44 mm thick,20 ga.,815 mm x 2035 mm, hardware & frame not included			17.000	20.000	18.500	0.941
081 103-1060	Commercial Steel Door,Flush,full panel,Hollow core,44 mm thick,20 ga., 915 mm x 2135 mm, hardware & frame not included			16.000	18.000	17.000	1.000
081 103-1080	Commercial Steel Door,Flush,full panel,Hollow core,44 mm thick,20 ga.,1220 mm x 2135 mm, hardware & frame not included			14.000	16.000	15.000	1.143
081 103-1100	Commercial Steel Door,Flush,full panel,Hollow core,44 mm thick,20 ga.,1220 mm x 2440 mm, hardware & frame not included			12.000	14.000	13.000	1.333
081 103-1160	Commercial Steel Door,Flush,full panel,Hollow core,44 mm thick,18 ga.,915 mm x 2135 mm,hardware & frame not included			15.000	17.000	16.000	1.067
081 103-1180	Commercial Steel Door,Flush,full panel,Hollow core,44 mm thick,18 ga.,1220 mm x 2135 mm,hardware & frame not included			13.000	15.000	14.000	1.231
081 103-1260	Commercial Steel Door,Flush,Half glass,panel,hollow core,44 mm thick,20 ga., 915 mm x 2135 mm,hardware & frame not included			17.000	20.000	18.500	0.941
081 103-1300	Commercial Steel Door,Flush,Half glass,panel,hollow core,44 mm thick,20 ga., 1220 mm x 2440 mm,hardware & frame not included			12.000	14.000	13.000	1.333
081 103-1360	Commercial Steel Door,Flush,Half glass,panel,hollow core,44 mm thick,18 ga., 915 mm x 2135 mm,hardware & frame not included			16.000	18.000	17.000	1.000
081 103-1400	Commercial Steel Door,Flush,Half glass,panel,hollow core,44 mm thick,18 ga., 1220 mm x 2440 mm,hardware & frame not included			13.000	15.000	14.000	1.231
081 103-1760	Commercial Steel Door,flush,insulated, 44 mm thick,full panel, 18 ga, 915mm x 2135 mm,hardware & frame not included			14.000	16.000	15.000	1.143
081 103-1800	Commercial Steel Door,flush,insulated, 44 mm thick,full panel, 18 ga, 1220 mm x 2440 mm,hardware & frame not included			12.000	14.000	13.000	1.333
081 103-1820	Commercial Steel Door,flush,insulated, 44 mm thick,half glass, 18 ga,915 mm x 2035 mm,hardware & frame not included			15.000	17.000	16.000	1.067
081 103-1900	Commercial Steel Door,flush,insulated, 44 mm thick,half glass, 18 ga,1220 mm x 2440 mm,hardware & frame not included			13.000	15.000	14.000	1.231
<b>081 106</b>	<b>DOOR FRAMES:</b>						
081 106-0100	Door frames,150 mm steel channels 12 kg/m, with anchors and bar stops. 915 mm x 2135 mm door, weighs 91 kg	EA	1.00 Struc. Foreman 3.00 Struc. Steel Workers 2.00 Helpers 1.00 Gas Welding Machine 2.00 Power Tools	12.000	14.000	13.000	2.000
081 106-0200	Door frames, 200 mm steel channels 17 kg/m, with anchors and bar stops, 1830 mm x 2440 mm door, weighs 136 kg			8.000	9.000	8.500	3.000
081 106-0300	Door frames, 200 steel channels 17 kg with anchors and bar stops, 2440 mm x 3660 mm door, weights 204 kg.			6.000	7.000	6.500	4.000
081 106-0500	Door frames, 250 mm steel channels 22 kg/m with anchors and bar stops, 3660 mm x 3660 mm door weighs 283 kg			5.000	6.000	5.500	4.800
081 106-0600	Door frames, 310 mm steel channels 31 kg/m with anchors and bar stops, 3660 mm x 3660 mm door weighs 374 kg			4.000	5.000	4.500	6.000
081 106-0700	Door frames, 310 mm steel channels 31 kg/m with anchors and bar stops, 3660 mm x 4880 mm door weighs 453 kg			3.000	3.000	3.000	8.000
<b>081 110</b>	<b>FIRE DOOR:</b>						
	<b>"Hardware &amp; frame not included"</b>						
081 110-0040	Fire door steel,flush, 90 minute, full panel, 20 ga., 815 mm x 2035 mm,hardware & frame not included	EA	0.250 Skilled Foreman 2.000 Carpenters 1.000 Helper 2.000 Power Tools	17.000	20.000	18.500	0.941
081 110-0060	Fire door steel,flush, 90 minute, full panel,20 ga.,915 mm x 2035 mm,hardware & frame not included			16.000	18.000	17.000	1.000
081 110-0080	Fire door steel,flush, 90 minute,full panel, 20 ga., 915 mm x 2135 mm,hardware & frame not included			16.000	18.000	17.000	1.000
081 110-0160	Fire door steel,flush, 90 minute,full panel, 18 ga., 815 mm x 2135 mm,hardware & frame not included			16.000	18.000	17.000	1.000
081 110-0180	Fire door steel,flush, 90 minute,full panel, 18 ga., 915 mm x 2135 mm,hardware & frame not included			15.000	17.000	16.000	1.067
081 110-0200	Fire door steel,flush, 90 minute,full panel, 18 ga., 1220 mm x 2135 mm,hardware & frame not included			14.000	16.000	15.000	1.143
081 110-0580	Fire door steel,flush, 90 min.,composite, 20 ga., 915mm x 2135 mm			15.000	17.000	16.000	1.067
081 110-0680	Fire door steel,flush, 3 hour, composite, 18 ga., 915 mm x 2135 mm			15.000	17.000	16.000	1.067
081 110-0700	Fire door steel,flush, 3 hour, composite, 18 ga., 1220 mm x 2135 mm			13.000	15.000	14.000	1.231
<b>081 114</b>	<b>RESIDENTIAL STEEL DOOR:</b>						
081 114-0060	Residential steel door,prehung,insulated,exterior embossed,full panel 915 mm x 2135 mm, no hardware	EA	0.250 Skilled Foreman 2.000 Carpenters 1.000 Helper 2.000 Power Tools	14.000	16.000	15.000	1.143



# **DIVISION 08 :DOORS & WINDOWS**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVERG.	AVRG. E.H.
081 114-0070	Residential steel door,prehung,insulated,exterior embossed,full panel 1625 mm x 2135 mm double leaf door,no hardware	↓	↓	8.000	9.000	8.500	2.000
081 114-0220	Residential steel door,prehung,insulated,exterior embossed,half glass 915 mm x 2135 mm,no hardware	EA	0.250 Skilled Foreman 2.000 Carpenters 1.000 Helper 2.000 Power Tools	15.000	17.000	16.000	1.067
081 114-2300	Residential steel door,prehung,insulated,intenor,close,bi-fold 915 mm x 2035 mm,no hardware	↓	↓	15.000	17.000	16.000	1.067
081 114-2420	Residential steel door,prehung,insulated,intenor,close,bi-fold 1830 mm x 2035 mm,no hardware	↓	↓	12.000	14.000	13.000	1.333
<b>081 200</b>	<b>ALUMINUM DOORS &amp; FRAMES:</b>						
<b>081 204</b>	<b>ALUMINUM FRAMES:</b>						
081 200-0500	Aluminum frames entrance,any finish, 1830 mm x 2135 mm opening	OPENING	0.125 Skilled Foreman 2.000 Skilled Workers 1.000 Helper 2.000 Power Tools	6.000	7.000	6.500	2.667
081 200-0600	Aluminum frame entrance,any finish, 915 mm x 2135 mm opening	↓	↓	7.000	8.000	7.500	2.286
081 200-1500	Aluminum frames entrance,any finish,with 915mm high transoms, 1830 mm x 3050 mm opening	↓	↓	6.000	7.000	6.500	2.667
<b>081 212</b>	<b>ALUMINUM DOORS &amp; FRAMES:</b>						
081 212-0020	Aluminum doors & frames,entrance,narrow stile,including hardware & double glazed 17 mm, 915 mm x 2135 mm opening	EA	0.125 Skilled Foreman 2.000 Skilled Workers 1.000 Helper 2.000 Power Tools	2.000	2.000	2.000	8.000
081 212-0200	Aluminum doors & frames,entrance,narrow stile,including hardware and closer,single glazed 10 mm, 1067 mm x 3050 mm opening, 915 mm high transom	↓	↓	2.000	2.000	2.000	8.000
081 212-0300	Aluminum doors & frames,entrance,narrow stile,including hardware and closer,double glazed 21 mm, 1830 mm x 2135 mm opening	↓	↓	1.000	1.000	1.000	16.000
081 212-0400	Aluminum doors & frames,entrance,narrow stile,including hardware and closer,single glazed 12 mm, 1830 mm x 3050 mm opening, 915 mm high transom	↓	↓	1.000	1.000	1.000	16.000
081 212-1100	Aluminum doors & frames,entrance,narrow stile,including hardware,closer and double glazed 21 mm, 1067 mm x 3050 mm opening, 915 mm high transom	↓	↓	2.000	2.000	2.000	8.000
081 212-1200	Aluminum doors & frames,entrance,narrow stile,including hardware, closer,and double glazed 25 mm, 1830 mm x 2135 mm opening	↓	↓	2.000	2.000	2.000	8.000
081 212-1400	Aluminum doors & frames,entrance,narrow stile,including hardware, closer,and double glazed 25 mm, 1830 mm x 3050 mm opening, 915 mm high transom	↓	↓	1.000	1.500	1.250	16.000
<b>082</b>	<b>WOOD &amp; PLASTIC DOORS</b>						
<b>082 050</b>	<b>WOOD &amp; PLASTIC DOORS</b>						
<b>082 054</b>	<b>WOOD FRAMES:</b>						
082 504-0440	Exterior frame,including exterior trim,pine, 30 mm upto 167 mm deep	LM	0.125 Skilled Foreman 2.000 Carpenters 1.000 Helper 2.000 Power Tools	110.000	127.000	118.500	0.145
082 504-0600	Exterior frame,including exterior trim,oak or walnut, 30 mm upto 167 mm deep	↓	↓	100.000	115.000	107.500	0.160
082 504-1000	Exterior wood sills, 50 mm x 200 mm deep oak	↓	↓	30.000	35.000	32.500	0.533
082 504-3000	Wood frame,interior pine, 17 mm upto 132 mm deep	↓	↓	110.000	127.000	118.500	0.145
082 504-3240	Wood frame,interior, oak or walnut, 17 mm upto 132 mm deep	↓	↓	100.000	115.000	107.500	0.160
082 504-3600	Wood door pocket frame	EA	↓	15.000	17.000	16.000	1.067
082 504-3800	Door threshold,oak 16 mm x 90 mm deep	LM	↓	55.000	63.000	59.000	0.291
082 504-3840	Door threshold,oak 16 mm x 145 mm deep	↓	↓	50.000	58.000	54.000	0.320
<b>082 062</b>	<b>WOOD DOOR, ARCHITECTURAL:</b>						
082 062-0020	Interior Wood door architectural, flush, 44 mm, 7 ply hollow core,any type of wood veneer, 610 mm x 2035 mm,hardware and frame not included	EA	0.125 Skilled Foreman 2.000 Carpenters 1.000 Helper 2.000 Power Tools	16.000	18.000	17.000	1.000
082 062-0100	Interior Wood door architectural, flush, 44mm, 7 ply,hollow core, 1220 mm x 2135 mm,hardware and frame not included	↓	↓	15.000	17.000	16.000	1.067
082 062-1320	Interior Wood door,architectural flush,medium duty,overlay on hardboard 915 mm x 2035 mm,hardware and frame not included	↓	↓	16.000	18.000	17.000	1.000
082 062-1400	Interior Wood door architectural, flush,medium duty,overlay on hardboard 1220 mm x 2135 mm,hardware and frame not included	↓	↓	15.000	17.000	16.000	1.067
082 062-1820	Interior Wood door architectural, flush,high pressure plastic laminate 915 mm x 2135 mm,hardware and frame not included	↓	↓	16.000	18.000	17.000	1.000
082 062-1840	Interior Wood door architectural, flush,high pressure plastic laminate 1220 mm x 2440 mm,hardware and frame not included	↓	↓	15.000	17.000	16.000	1.067
082 062-2080	Interior Wood door architectural, flush, 5 ply particle core,veneered any wood veneer, 915 mm x 2135 mm,hardware and frame not included	↓	↓	12.000	14.000	13.000	1.333
082 062-2100	Interior Wood door,architectural flush, 5 ply particle core,veneered any wood veneer, 1220 mm x 2135 mm, hardware and frame not included	↓	↓	12.000	14.000	13.000	1.333
082 062-3720	Interior Wood door architectural, flush, with plastic laminate on hardwood, 765 mm x 2035 mm	↓	↓	12.000	14.000	13.000	1.333
082 062-3740	Interior Wood door architectural, flush, with plastic laminate on hardwood, 915 mm x 2035 mm	↓	↓	11.000	13.000	12.000	1.455



# **DIVISION 08 :DOORS & WINDOWS**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVERG.	AVRG. E.H.
082 062-3780	Interior Wood door architectural ,flush, with plastic laminate on hardwood, 915 mm x 2135 mm			10.000	12.000	11.000	1.600
082 062-3800	Interior Wood door architectural ,flush, with plastic laminate on hardwood, 1220 mm x 2135 mm			8.000	9.000	8.500	2.000
082 062-4040	Exterior Wood door architectural, flush,solid wood core, birch or oak or walnut veneered face, 44mm x 2135 mm x 915 mm wide			14.000	16.000	15.000	1.143
<b>082 066</b>	<b>WOOD DOOR, DECORATOR:</b>						
082 066-3020	Wood doors,decorator,solid wood,mahogany,pine or red oak, 44 mm, 915 mm x 2135 mm, average,hardware & frame not included	EA	0.125 Skilled Foreman 2.00 Carpenters 1.00 Helper 2.00 Power Tools	13.000	15.000	14.000	1.231
082 066-3040	Wood doors,decorator,solid wood,mahogany,pine or red oak, 44 mm, 1067 mm x 2440 mm, average,hardware & frame not included			9.000	10.000	9.500	1.778
082 066-4000	Wood door,hand carved,mahogany or red oak, 915 mm x 2135 mm, average,hardware & frame not included			13.000	15.000	14.000	1.231
082 066-4040	Wood door,hand carved,mahogany or red oak,1067 mm x 2440 mm, average,hardware & frame not included			9.000	10.000	9.500	1.778
082 066-6520	Wood door,interior cate doors, 915 mm opening,panel pine,hardware & frame not included			15.000	17.000	16.000	1.067
082 066-6550	Wood door,interior cate doors, 915 mm opening,louvered pine,hardware & frame not included			15.000	17.000	16.000	1.067
<b>082 070</b>	<b>WOOD FIRE DOORS:</b>						
082 070-0040	Wood fire doors Mineral core, 3 ply stile,1 hour rated, veneered any type, 44 mm x 765 mm x 2035 mm,hardware & frame not included	EA	0.125 Skilled Foreman 2.00 Carpenters 1.00 Helper 2.00 Power Tools	13.000	15.000	14.000	1.231
082 070-0090	Wood fire doors Mineral core, 3 ply stile,1 hour rated, veneered any type, 44 mm x 915 mm x 2135 mm,hardware & frame not included			11.000	13.000	12.000	1.455
082 070-0100	Wood fire doors Mineral core, 3 ply stile,1 hour rated, veneered any type, 44 mm x 1220 mm x 2135 mm,hardware & frame not included			11.000	13.000	12.000	1.455
082 070-0490	Wood fire doors, 1 hour rated medium duty overlay on hardboard, 44 mm thick, 915 mm x 2135 mm,hardware & frame not included			12.000	14.000	13.000	1.333
082 070-0500	Wood fire doors, 1 hour rated medium duty overlay on hardboard, 44 mm thick, 1220 mm x 2135 mm,hardware & frame not included			11.000	13.000	12.000	1.455
082 070-0580	Wood fire doors, 1 hour rated, with high pressure plastic laminated, 44 mm thick, 915 mm x 2035 mm,hardware & frame not included			11.000	13.000	12.000	1.455
082 070-0590	Wood fire doors, 1 hour rated, with high pressure plastic laminated,44mm thick, 915 mm x 2135 mm,hardware & frame not included			10.000	12.000	11.000	1.600
082 070-0600	Wood fire doors, 1 hour rated, with high pressure plastic laminated, 44 mm thick, 1220 mm x 2135 mm,hardware & frame not included			11.000	13.000	12.000	1.455
082 070-2260	Wood fire doors,custom architectural 1 hour rated,flush, 44 mm thick,solid core 915 mm x 2135 mm,hardware & frame not included			13.000	15.000	14.000	1.231
082 070-2300	Wood fire doors,custom architectural 1 hour rated,flush, 44 mm thick,solid core 1220 mm x 2135 mm,hardware & frame not included			12.000	14.000	13.000	1.333
082 070-2400	Wood fire doors,custom architectural 1 hour rated,flush, 44 mm thick,solid core 1220 mm x 2440 mm,hardware & frame not included			10.000	12.000	11.000	1.600
<b>082 074</b>	<b>WOOD DOORS, paneled:</b>						
082 074-0080	Wood doors,paneled interior,six panel,hollow core, 35 mm thick,molded hardboard 915 mm x 2035 mm,hardware & frame not included	EA	0.125 Skilled Foreman 2.00 Carpenters 1.00 Helper 2.00 Power Tools	16.000	18.000	17.000	1.000
082 074-0560	Wood doors,paneled interior,six panel,solid, 35 mm thick,pine, 765 mm x 2135 mm,hardware & frame not included			13.000	15.000	14.000	1.231
082 074-0580	Wood doors,paneled interior,six panel,solid, 35 mm thick,pine, 915 mm x 2135 mm,hardware & frame not included			12.000	14.000	13.000	1.333
<b>082 078</b>	<b>WOOD DOORS, RESIDENTIAL:</b>						
082 078-0260	Wood doors,residential, exterior,combination storm & screen,pine,full lite, 2055 mm x 615 mm wide,hardware & frame not included	EA	0.125 Skilled Foreman 2.00 Carpenters 1.00 Helper 2.00 Power Tools	9.000	10.000	9.500	1.778
082 078-0300	Wood doors,residential, exterior,combination storm & screen,pine,full lite, 2135 mm x 915 mm wide,hardware & frame not included			8.000	9.000	8.500	2.000
082 078-1020	Exterior wood doors,entrance, 6 panel pine, 44 mm x 2135 mm x 915 mm wide,hardware & frame not included			14.000	16.000	15.000	1.143
082 078-1120	Exterior wood doors,entrance, 6 panel pine, 44 mm x 2135 mm x 915 mm wide,hardware & frame not included			14.000	16.000	15.000	1.143
082 078-2700	Wood doors,interior closet,bi-fold,w/hardware,no frame or trim included, flush, 1980 mm or 2035 mm high x 915 mm wide			12.000	14.000	13.000	1.333
082 078-2760	Wood doors,interior closet,bi-fold,w/hardware,no frame or trim included, flush, 1980 mm or 2035 mm high x 1220 mm wide			11.000	13.000	12.000	1.455
082 078-2780	Wood doors,interior closet,bi-fold,w/hardware,no frame or trim included, flush, 1980 mm or 2035 mm high x 1525 mm wide			10.000	12.000	11.000	1.600
082 078-3200	Wood doors,interior closet,bi-fold,w/hardware,no frame or trim included, louvered,pine,1980 mm or 2035 mm x 915 mm wide			12.000	14.000	13.000	1.333
082 078-3280	Wood doors,interior closet,bi-fold,w/hardware,no frame or trim included, louvered,pine, 1980 mm or 2035 mm x 1830 mm wide			9.000	10.000	9.500	1.778
082 078-6100	Door closet,folding accordion,not including frame,vinyl, 2 layer			35.000	40.000	37.500	0.457
082 078-6140	Door closet,folding accordion,not including frame,woven mahogany and vinyl			34.000	39.000	36.500	0.471



# **DIVISION 08 :DOORS & WINDOWS**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVERG.	AVRG. E.H.
<b>082 082</b>	<b>PRE-HUNG DOORS:</b>						
082 082-0340	Pre-hung doors,exterior,wood,combination storm & screen, 2055 mm x 915 mm wide	EA	0.125 Skilled Foreman 2.00 Carpenters 1.00 Helper 2.00 Power Tools	14.000	16.000	15.000	1.143
082 082-4440	Pre-hung doors,interior, 117 mm solid jamb,flush,solid core, 35 mm x 2035 mm x 915 mm wide			18.000	21.000	19.500	0.889
082 082-4640	Pre-hung doors,interior, 117 mm solid jamb,flush,hollow core, 35 mm x 2035 mm x 915 mm wide			18.000	21.000	19.500	0.889
<b>083</b>	<b>SPECIAL DOORS</b>						
<b>083 050</b>	<b>ACCESS DOORS</b>						
<b>083 054</b>	<b>ACCESS DOORS:</b>						
083 054-1100	Access doors,fire rated,with lock,metal, 300 mm x 300 mm	EA	0.125 Skilled Foreman 1.000 Carpenter 1.000 Power Tools	8.000	9.000	8.500	1.000
083 054-1150	Access doors,fire rated,with lock,metal, 455 mm x 455 mm			7.000	8.000	7.500	1.143
083 054-1200	Access doors,fire rated,with lock,metal, 610 mm x 610 mm			7.000	8.000	7.500	1.143
083 054-1350	Access doors,fire rated, with lock,metal, 915 mm x 915 mm			6.000	7.000	6.500	1.333
083 054-1400	Access doors,fire rated, with lock,metal, 1220 mm x 1220 mm			6.000	7.000	6.500	1.333
083 054-1600	Access doors,fire rated, with lock,stainless steel, 300mm x 300 mm			8.000	9.000	8.500	1.000
083 054-1700	Access doors,fire rated, with lock,stainless steel, 610 mm x 610 mm			7.000	8.000	7.500	1.143
083 054-1750	Access doors,fire rated,with lock,stainless steel, 610 mm x 915 mm			6.000	7.000	6.500	1.333
083 054-3000	Recessed access door,for acoustic tile,metal, 300 x 300 mm			3.000	4.000	3.500	2.667
083 054-3200	Recessed access door,for acoustic tile,metal, 610 mm x 610 mm			3.000	4.000	3.500	2.667
083 054-3250	Recessed access door,for acoustic tile,metal, 610 mm x 915 mm			3.000	4.000	3.500	2.667
083 054-4200	Recessed access door,for drywall,metal, 610 mm x 915 mm			4.000	5.000	4.500	2.000
<b>083 100</b>	<b>SLIDING DOORS:</b>						
<b>083 102</b>	<b>GLASS,SLIDING:</b>						
083 102-0030	Sliding vinyl clad door, 25 mm insulated glass, 1836 mm x 2440 mm high	EA	0.125 Skilled Foreman 2.00 Carpenters 1.00 Helper 2.00 Power Tools	3.000	4.000	3.500	5.333
083 102-0100	Sliding vinyl clad door, 25 mm insulated glass,2440 mm X 2085 mm high	OPENING		3.000	4.000	3.500	5.333
083 102-0500	Sliding vinyl clad door, 25 mm insulated glass, 3 leaf, 3660 mm x 2085 mm high			2.000	23.000	12.500	8.000
<b>083 108</b>	<b>STEEL,SLIDING:</b>						
083 108-0100	Steel,electric operated sliding door up to 15 m wide x 5.4 m high,standard duty,average	SQM	1.00 Struc. Steel Foreman 5.00 Struc. Steel Workers 1.00 Electrician 3.00 Laborers 1.00 Equip.Oper.(crane) 1.00 Hyd Crane,23 metric Ton	27.000	31.000	29.000	0.296
083 108-0500	Steel,electric operated sliding door up to 15 m wide x 5.4 m high,heavy duty,average			24.000	28.000	26.000	0.333
<b>083 180</b>	<b>SECURITY DOORS</b>						
<b>083 182</b>	<b>SECURITY GATES</b>						
	<i>See division 106101</i>						
<b>083 184</b>	<b>VAULT FRONT:</b>						
083 184-0100	Vault front door and frame, 815 mm x 1980 mm,clear opening, 1 hour test, weighs 340 kg, with time clock	OPENING	0.125 Skilled Foreman 2.00 Skilled Workers 1.00 Electrician 2.00 Laborers 2.00 Power Tools	1.200	2.000	1.600	13.333
083 184-0200	Vault front door and frame, 815 mm x 1980 mm,clear opening, 2 hour test, weighs 430 kg, with time clock			1.000	1.000	1.000	16.000
083 184-0250	Vault front door and frame, 1015 mm x 1980 mm,clear opening, 2 hour test, weighs 512 kg, with time clock			0.750	1.000	0.875	21.333
083 184-0300	Vault front door and frame, 815 mm x 1980 mm,clear opening, 4 hour test, weighs 465 kg, with time clock			0.900	1.000	0.950	17.778
083 184-0350	Vault front door and frame, 1015 mm x 1980 mm,clear opening, 4 hour test, weighs 517 kg, with time clock			0.700	1.000	0.850	22.857
083 184-2050	Security vault door,class I			0.080	1.000	0.540	200.000
<b>083 250</b>	<b>COLD STORAGE DOORS</b>						
<b>083 251</b>	<b>COLD STORAGE:</b>						
083 251-0500	Cold storage door,galvanized steel,horizontal sliding>manual, 1525 mm x 2135 mm x 150 mm	EA	0.125 Skilled Foreman 2.00 Skilled Workers 2.00 Laborers 2.00 Power Tools	1.850	2.000	1.925	4.519
083 251-1000	Cold storage door,galvanized steel,horizontal sliding,power operated, 1525 mm x 2135 mm x 150 mm		0.125 Skilled Foreman 2.00 Skilled Workers 1.00 Electrician 2.00 Laborers 2.00 Power Tools	1.750	2.000	1.875	9.143



# **DIVISION 08 :DOORS & WINDOWS**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVERG.	AVRG. E.H.
083 251-1300	Cold storage door,galvanized steel,horizontal sliding,manual, 2745 mm x 3050 mm x 150mm		0.125 Skilled Foreman 2.00 Skilled Workers 2.00 Laborers 2.00 Power Tools	1.600	2.000	1.800	10.090
083 251-2000	Cold storage door,galvanized steel,horizontal sliding,power operated, 2745 mm x 3050 mm x 150 mm		0.125 Skilled Foreman 2.00 Skilled Workers 1.00 Electrician 2.00 Laborers 2.00 Power Tools	1.500	2.000	1.750	10.667
083 251-3000	Cold storage door,galvanized steel,aluminum or stainless steel,hinged,lightweight, 915 mm x 2135 mm x 150 mm thick		0.125 Skilled Foreman 2.00 Skilled Workers 2.00 Laborers 2.00 Power Tools	1.300	2.000	1.650	12.308
083 251-5000	Cold storage door,galvanized steel,bi-parting,electric operated, 1830 mm x 2440 mm opening, 100 mm thick for cooler or freezer	OPENING	0.125 Skilled Foreman 2.00 Skilled Workers 1.00 Electrician 2.00 Laborers 2.00 Power Tools	0.750	1.000	0.875	21.333
083 251-6500	Cold storage 3 hr., fire rated door,galvanized steel,double Bi-parting, 1830 mm x 2440 mm	OPENING	0.125 Skilled Foreman 2.00 Skilled Workers 2.00 Laborers 2.00 Power Tools	0.650	1.000	0.825	24.615
<b>083 300</b>	<b>COILING DOORS</b>						
<b>083 302</b>	<b>COUNTER DOORS:</b>						
083 302-0600	Counter doors stainless steel,galvanized steel or aluminum, 1220mm high roll-up, 1830 mm long	OPENING	0.125 Skilled Foreman 2.00 Carpenters 1.00 Helper 2.00 Power Tools	1.900	2.000	1.950	8.421
083 302-0700	Counter doors stainless steel,galvanized steel or aluminum, 1220 mm high roll-up, 3000 mm long	"	"	1.700	2.000	1.850	9.412
<b>083 400</b>	<b>COILING GRILLES</b>						
<b>083 402</b>	<b>ROLL UP GRILLE:</b>						
083 402-0500	Roll up grille steel,manual operated, 4570 mm x 2440 mm high	SOM	0.125 Skilled Foreman 2.00 Skilled Workers 2.00 Laborers 2.00 Power Tools	7.000	8.000	7.500	2.286
<b>083 406</b>	<b>ROLLING GRILLE SUPPORTS:</b>						
083 406-0100	Rolling grille over head,frame support, opening 4.5 m x 2.44 m	LM	1.00 Struct. Foreman 3.00 Struct. Steel Workers 2.00 Laborers 1.00 Gas Welding Machine 2.00 Power Tools	10.000	12.000	11.000	2.400
<b>083 350</b>	<b>FLEXIBLE DOORS</b>						
<b>083 551</b>	<b>FLEXIBLE TRANSPARENT STRIP ENTRANCE:</b>						
083 551-0200	Flexible transparent strip entrance door, 300 mm strip width,full overlap,including suspension	SOM SURFACE	0.125 Skilled Foreman 3.00 Sheet Metal Workers 1.00 Helper 2.00 Power Tools	9.000	10.000	9.500	1.778
<b>083 600</b>	<b>SECTIONAL OVERHEAD DOORS</b>						
<b>083 604</b>	<b>OVERHEAD,COMMERCIAL:</b>						
083 604-1000	Commercial,overhead sectional door,wood, heavy duty,without frame, 45 mm thick, 2440 mm wide x 2440 mm high	EA	0.125 Skilled Foreman 2.00 Carpenters 1.00 Helper 2.00 Power Tools	1.900	2.000	1.950	8.421
083 604-1100	Commercial,overhead sectional door,wood, heavy duty,without frame, 45 mm thick, 3050mm wide x 3050 mm high			1.700	2.000	1.850	9.412
083 604-1200	Commercial,overhead sectional door,wood, heavy duty,without frame, 45 mm thick, 3660 mm wide x 3660 mm high			1.500	2.000	1.750	10.667
083 604-1300	Commercial,overhead sectional door,chain hoist,wood, heavy duty,without frame, 45 mm thick, 4265 mm wide x 4265 mm high			1.300	2.000	1.650	12.306
083 604-1400	Commercial,overhead sectional door,chain hoist,wood, heavy duty,without frame, 45 mm thick, 3660 mm wide x 4875 mm high			0.950	1.000	0.975	16.842
083 604-1500	Commercial,overhead sectional door,chain hoist,wood, heavy duty,without frame, 45 mm thick, 6095 mm wide x 2440 mm high			0.750	1.000	0.875	21.333
083 604-2300	Commercial,overhead sectional door,fiberglass & aluminum,heavy duty,without frame, 45 mm x 3660 mm x 3660 mm			1.350	2.000	1.675	11.852
083 604-2450	Commercial,overhead sectional chain hoist door,fiberglass & aluminum,heavy duty,without frame, 45 mm x 6095 mm x 6095 mm			0.450	1.000	0.725	35.556
083 604-2600	Commercial,overhead sectional door,steel 24 ga, manual ,without frame 2440 mm x 2440 mm			1.900	2.000	1.950	8.421
083 604-2650	Commercial,overhead sectional door,steel 24 ga, manual ,without frame 3050 mm x 3050 mm			1.700	2.000	1.850	9.412
083 604-2800	Commercial,overhead sectional chain hoisted door,steel 24 ga,manual ,without frame 6095 mm x 4265 mm			0.650	1.000	0.825	24.615
083 604-2900	Commercial Overhead Door,Electric trolley operator, 250W, overhead sectional doors upto 3.6 m x 3.6 m		0.125 Skilled Foreman 2.00 Carpenters 0.50 Electrician 1.00 Laborer 2.00 Power Tools	1.425	2.000	1.713	11.228
083 604-2950	Commercial Overhead Door,Electric trolley operator, 375W, for doors over 3660 mm x 3660 mm			1.200	2.000	1.600	13.333
<b>083 606</b>	<b>RESIDENTIAL GARAGE DOORS:</b>						





# **DIVISION 08 :DOORS & WINDOWS**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVERG.	AVRG. E.H.
083 251-1300	Cold storage door,galvanized steel,horizontal sliding,manual, 2745 mm x 3050 mm x 150mm		0.125 Skilled Foreman 2.00 Skilled Workers 2.00 Laborers 2.00 Power Tools	1.600	2.000	1.800	10.000
083 251-2000	Cold storage door,galvanized steel,horizontal sliding,power operated, 2745 mm x 3050 mm x 150 mm		0.125 Skilled Foreman 2.00 Skilled Workers 1.00 Electrician 2.00 Laborers 2.00 Power Tools	1.500	2.000	1.750	10.667
083 251-3000	Cold storage door,galvanized steel,aluminum or stainless steel,hinged,lightweight, 915 mm x 2135 mm x 150 mm thick		0.125 Skilled Foreman 2.00 Skilled Workers 2.00 Laborers 2.00 Power Tools	1.300	2.000	1.650	12.308
083 251-5000	Cold storage door,galvanized steel,bi-parting,electric operated, 1830 mm x 2440 mm opening, 100 mm thick for cooler or freezer	OPENING	0.125 Skilled Foreman 2.00 Skilled Workers 1.00 Electrician 2.00 Laborers 2.00 Power Tools	0.750	1.000	0.875	21.333
083 251-6500	Cold storage 3 hr.. fire rated door,galvanized steel,double Bi-parting, 1830 mm x 2440 mm	OPENING	0.125 Skilled Foreman 2.00 Skilled Workers 2.00 Laborers 2.00 Power Tools	0.650	1.000	0.825	24.615
<b>083 300</b>	<b>COILING DOORS</b>						
<b>083 302</b>	<b>COUNTER DOORS:</b>						
083 302-0600	Counter doors stainless steel,galvanized steel or aluminum, 1220mm high roll-up, 1830 mm long	OPENING	0.125 Skilled Foreman 2.00 Carpenters 1.00 Helper 2.00 Power Tools	1.900	2.000	1.950	8.421
083 302-0700	Counter doors stainless steel,galvanized steel or aluminum, 1220 mm high roll-up, 3000 mm long			1.700	2.000	1.850	9.412
<b>083 400</b>	<b>COILING GRILLES</b>						
<b>083 402</b>	<b>ROLL UP GRILLE:</b>						
083 402-0500	Roll up grille steel,manual operated, 4570 mm x 2440 mm high	SQM	0.125 Skilled Foreman 2.00 Skilled Workers 2.00 Laborers 2.00 Power Tools	7.000	8.000	7.500	2.286
<b>083 406</b>	<b>ROLLING GRILLE SUPPORTS:</b>						
083 406-0100	Rolling grille over head,frame support, opening 4.5 m x 2.44 m	LM	1.00 Struc. Foreman 3.00 Struct. Steel Workers 2.00 Laborers 1.00 Gas Welding Machine 2.00 Power Tools	10.000	12.000	11.000	2.400
<b>083 350</b>	<b>FLEXIBLE DOORS</b>						
<b>083 551</b>	<b>FLEXIBLE TRANSPARENT STRIP ENTRANCE:</b>						
083 551-0200	Flexible transparent strip entrance door, 300 mm strip width,full overlap,including suspension	SQM SURFACE	0.125 Skilled Foreman 3.00 Sheet Metal Workers 1.00 Helper 2.00 Power Tools	9.000	10.000	9.500	1.778
<b>083 600</b>	<b>SECTIONAL OVERHEAD DOORS</b>						
<b>083 604</b>	<b>OVERHEAD,COMMERCIAL:</b>						
083 604-1000	Commercial,overhead sectional door,wood, heavy duty,without frame, 45 mm thick, 2440 mm wide x 2440 mm high	EA	0.125 Skilled Foreman 2.00 Carpenters 1.00 Helper 2.00 Power Tools	1.900	2.000	1.950	8.421
083 604-1100	Commercial,overhead sectional door,wood, heavy duty,without frame, 45 mm thick, 3050mm wide x 3050 mm high			1.700	2.000	1.850	9.412
083 604-1200	Commercial,overhead sectional door,wood, heavy duty,without frame, 45 mm thick, 3660 mm wide x 3660 mm high			1.500	2.000	1.750	10.667
083 604-1300	Commercial,overhead sectional door,chain hoist,wood, heavy duty,without frame, 45 mm thick, 4265 mm wide x 4265 mm high			1.300	2.000	1.650	12.308
083 604-1400	Commercial,overhead sectional door,chain hoist,wood, heavy duty,without frame, 45 mm thick, 3660 mm wide x 4875 mm high			0.950	1.000	0.975	16.842
083 604-1500	Commercial,overhead sectional door,chain hoist,wood, heavy duty,without frame, 45 mm thick, 6095 mm wide x 2440 mm high			0.750	1.000	0.875	21.333
083 604-2300	Commercial,overhead sectional door, fiberglass & aluminum,heavy duty,without frame, 45 mm x 3660 mm x 3660 mm			1.350	2.000	1.675	11.852
083 604-2450	Commercial,overhead sectional chain hoist door, fiberglass & aluminum,heavy duty,without frame, 45 mm x 6095 mm x 6095 mm			0.450	1.000	0.725	35.556
083 604-2600	Commercial,overhead sectional door,steel 24 ga, manual ,without frame 2440 mm x 2440 mm			1.900	2.000	1.950	8.421
083 604-2650	Commercial,overhead sectional door,steel 24 ga, manual ,without frame 3050 mm x 3050 mm			1.700	2.000	1.850	9.412
083 604-2800	Commercial,overhead sectional chain hoisted door,steel 24 ga,manual ,without frame 6095 mm x 4265 mm			0.650	1.000	0.825	24.615
083 604-2900	Commercial Overhead Door,Electric trolley operator, 250W, overhead sectional doors upto 3.6 m x 3.6 m		0.125 Skilled Foreman 2.00 Carpenters 0.50 Electrician 1.00 Laborer 2.00 Power Tools	1.425	2.000	1.713	11.228
083 604-2950	Commercial Overhead Door,Electric trolley operator, 375W, for doors over 3660 mm x 3660 mm			1.200	2.000	1.600	13.333
<b>083 606</b>	<b>RESIDENTIAL GARAGE DOORS:</b>						

# **DIVISION 08 :DOORS & WINDOWS**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVERG.	AVRG. E.H.
<b>084 701</b>	<b>REVOLVING DOORS:</b>						
084 701-0010	Revolving doors aluminum, up to 2.2 m diameter, 2.1 m high, average	OPENING	0.125 Skilled Foreman 4.000 Skilled workers 2.00 Laborers 2.000 Power Tools	0.650	1.000	0.825	24.615
084 701-1000	Revolving doors stainless steel, up to 2.2 m diameter, 2.1 m high, average			0.250	0.500	0.375	64.000
084 701-1100	Revolving doors solid bronze, up to 2.2 m diameter, 2.1 m high, average			0.150	0.500	0.325	106.667
084 701-1500	Revolving doors solid bronze upto 2.2 m diameter, 2.1 m high, with automatic controls, average		0.125 Skilled Foreman 4.000 Skilled workers 0.250 Electrician 2.00 Laborers 2.000 Power Tools	0.150	0.500	0.325	106.667
<b>085</b>	<b>METAL WINDOWS</b>						
<b>085 100</b>	<b>STEEL WINDOWS</b>						
<b>085 102</b>	<b>STEEL SASH:</b>						
085 102-0100	Steel sash custom unit, including glazing & trim, casement, fixed	SQM	0.125 Skilled Foreman 2.000 Skilled workers 1.00 Laborers 2.000 Power Tools	12.000	14.000	13.000	1.333
085 102-1500	Steel sash, industrial, fixed, including glazing & trim, horizontally pivoted			12.000	14.000	13.000	1.333
085 102-2100	Industrial security sash, including glazing & trim, fixed			12.000	14.000	13.000	1.333
085 102-2500	Steel picture window including glazing & trim	LM	0.125 Skilled Foreman 2.000 Skilled workers 1.00 Laborers 2.000 Power Tools	12.000	14.000	13.000	1.333
085 102-5000	Mullion for above steel sash items with interior cover			55.000	63.000	59.000	0.291
<b>085 104</b>	<b>STEEL WINDOWS:</b>						
085 104-1500	Commercial projected steel window including frame, trim & insulated glazing, 1145 mm x 1650 mm	EA	0.125 Skilled Foreman 2.000 Skilled workers 1.00 Laborers 2.000 Power Tools	9.000	10.000	9.500	1.778
085 104-1800	Commercial projected steel window including frame, trim & insulated glazing, 2055 mm x 1245 mm			6.000	7.000	6.500	2.667
<b>085 200</b>	<b>ALUMINUM WINDOWS</b>						
<b>085 202</b>	<b>ALUMINUM SASH:</b>						
085 202-0100	Fixed casement, aluminum sash window including glazing & trim	SDM	0.125 Skilled Foreman 2.000 Skilled workers 1.00 Laborers 2.000 Power Tools	12.000	14.000	13.000	1.333
085 202-0150	Fixed aluminum window sash, including glazing & trim			12.000	14.000	13.000	1.333
085 202-2000	Custom aluminum sash, without glazing			10.000	12.000	11.000	1.600
<b>085 204</b>	<b>ALUMINUM WINDOWS:</b>						
085 204-1000	Aluminum windows including frame and glazing, casement type, 1 m x 1 m, including screen	EA	0.125 Skilled Foreman 2.000 Skilled workers 1.00 Laborers 2.000 Power Tools	9.000	10.000	9.500	1.778
085 204-1600	Aluminum windows including frame and glazing, projected with screen, 1 m x 1 m			9.000	10.000	9.500	1.778
085 204-2000	Aluminum windows including frame and glazing, projected with screen, 1.4 m x 1.6 m			7.500	9.000	8.250	2.133
085 204-3000	Aluminum windows including frame and glazing, single hung, 600 mm x 900 mm, enameled with insulating glass & screen			9.000	10.000	9.500	1.778
085 204-3300	Aluminum windows including frame and glazing, single hung, 900 mm x 2000 mm, enameled with insulating glass & screen			7.500	9.000	8.250	2.133
085 204-3700	Aluminum windows including frame and glazing, single hung, 1 m x 1.5 m, powder coated with insulating glass & screen			8.000	9.000	8.500	2.000
085 204-3850	Aluminum windows including frame and glazing, awning type, 1 m x 1 m, powder coated with insulating glass & screen			13.000	15.000	14.000	1.231
085 204-3910	Aluminum windows including frame and glazing, awing type, 1 m x 1.2 m, powder coated with standard glass & screen			9.000	10.000	9.500	1.778
085 204-3930	Aluminum windows including frame and glazing, grade C, awing type, 915 mm x 1220 mm opening, enameled with standard glass & screen			9.000	10.000	9.500	1.778
085 204-3950	Aluminum windows including frame and glazing, awning type & hinged 1.2 m x 1.2 m, powder coated with insulating glass & screen			8.000	9.000	8.500	2.000
085 204-4000	Aluminum windows including frame and glazing, sliding 1.2 m x 1.2 m, standard or insulating glass			7.500	9.000	8.250	2.133
085 204-4300	Aluminum windows including frame and glazing, sliding, 1.2 m x 1.5 m, standard or insulating glass			7.500	9.000	8.250	2.133
085 204-4600	Aluminum windows including frame and glazing, sliding 1.8 m x 2.44 m, standard or insulating glass			4.500	5.000	4.750	3.556
085 204-5000	Aluminum windows including frame and glazing, sliding aluminum 2.7 m x 1.5 m opening, standard or insulating glass			3.750	5.000	4.375	4.267
<b>085 700</b>	<b>SCREENS</b>						
<b>085 701</b>	<b>SCREENS:</b>						



**DIVISION 08 :DOORS & WINDOWS**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVERG.	AVRG. E.H.
085 701-0800	Screens ,security screen,aluminum frame with stainless steel cloth	SQM	0.125 Skilled Foreman 1.000 Skilled workers 1.00 Laborers 1.000 Power Tools	100.000	115.000	107.500	0.080
<b>086 WOOD &amp; PLASTIC WINDOWS</b>							
<b>086 100 WOOD WINDOWS</b>							
<b>086 104 AWNING WINDOW:</b>							
086 104-1000	Awning window wood,vinyl clad,insulating glass,including frame,screen & trim, 900 mm x 900 mm	EA	0.125 Skilled Foreman 1.00 Carpenter 1.000 Helper 1.000 Power Tools	8.000	9.000	8.500	1.000
086 104-1500	Awning window wood,vinyl clad,insulating glass,including frame,screen & trim, 900 mm x 1.5 m			6.000	7.000	6.500	1.333
086 104-2000	Awning window wood,metal clad,insulating glass,including frame,screen & trim, 1.2 m x 1.2 m			7.000	8.000	7.500	1.143
086 104-2200	Awning window wood,metal clad,insulating glass,including frame,screen & trim, 1.2 m x 1.2 m			6.000	7.000	6.500	1.333
<b>086 108 BOW-BAY WINDOW:</b>							
086 108-1420	Bow-bay wood window,vinyl or metal clad,insulating glass,including frame,screen & trim, 1.8 m x 1.2 m, 3 panels	EA	0.125 Skilled Foreman 2.000 Carpenters 1.000 Helper 2.000 Power Tools	9.000	10.000	9.500	1.778
086 108-1640	Bow-bay wood window,metal or vinyl clad,insulating glass,including frame,screen & trim, 2.7 m x 1.2 m high, 4 panels			7.500	9.000	8.250	2.133
<b>086 120 CASEMENT WINDOW:</b>							
086 120-0200	Casement window including frame,screen,and exterior trim,wood 610 mm x 1370 mm high,standard or insulating glazing	EA	0.125 Skilled Foreman 1.00 Carpenter 1.000 Helper 1.000 Power Tools	8.000	9.000	8.500	1.000
086 120-1000	Casement window including frame,screen,and exterior trim,vinyl clad,insulating glass, 610 mm x 1830 mm	EA	0.125 Skilled Foreman 1.00 Carpenter 1.000 Helper 1.000 Power Tools	7.500	9.000	8.250	1.067
086 120-1120	Casement window,solid oak including solid oak frame,screen,exterior trim and insulating glass, 900 mm x 1.8 m high			6.500	7.000	6.750	1.231
<b>086 124 DOUBLE HUNG:</b>							
086 124-0200	Double hung,wood vinyl clad,including frame,screen & exterior trim,insulating glass, 915 mm x 1065 mm	EA	0.125 Skilled Foreman 1.00 Carpenter 1.000 Helper 1.000 Power Tools	9.000	10.000	9.500	0.889
086 124-1300	Double hung,wood vinyl clad,including frame,screen & exterior trim,insulating glass, 915 mm x 1.5 m			7.500	9.000	8.250	1.067
086 124-1500	Double hung,wood vinyl clad,including frame,screen & exterior trim,insulating glass, 1 m x 1.8 m			7.000	8.000	7.500	1.143
086 124-1542	Double hung,solid vinyl window including frame,screen & exterior trim,including glass 1 m x 1.2 m			7.500	9.000	8.250	1.067
086 124-1544	Double hung,solid vinyl window including frame,screen & exterior trim,including glass 1.2 m x 1.4 m			6.500	8.000	7.250	1.231
<b>086 132 PICTURE WINDOW:</b>							
086 132-0100	Picture window including frame and exterior trim,wood 1065 mm x 1220 mm high, standard or insulated glazing	EA	0.125 Skilled Foreman 2.000 Carpenters 1.000 Helper 2.000 Power Tools	11.000	13.000	12.000	1.455
086 132-0350	Picture window including frame and exterior trim,wood 1.5 m x 1.2 m high,standard or insulated glazing			10.000	12.000	11.000	1.600
086 132-0450	Picture window including frame and exterior trim,wood 1.8 m x 1.4 m high,standard or insulated glazing			9.000	10.000	9.500	1.778
<b>086 140 SLIDING WINDOW:</b>							
086 140-0100	Sliding window including frame,screen,and exterior trim,wood, 915 mm x 915 mm high,standard or insulated glazing	EA	0.125 Skilled Foreman 1.00 Carpenter 1.000 Helper 1.000 Power Tools	9.000	10.000	9.500	0.889
086 140-0300	Sliding window including frame,screen,and exterior trim,wood, 1.8 m x 1.5 m, high,standard or insulated glazing	EA		7.500	9.000	8.250	1.067
<b>086 148 WOOD SASH:</b>							
086 148-0050	Wood sash,including glazing & trim, 25 mm double glazed, 1.5 m x 1.2 m high	EA	0.125 Skilled Foreman 2.000 Carpenters 1.000 Helper 2.000 Power Tools	3.000	3.000	3.000	5.333
086 148-0300	Wood sash,including glazing & trim, 25 mm double glazed, 2 m x 1.4 m high			2.750	3.000	2.875	5.818
<b>086 152 WOOD SCREENS:</b>							
086 152-0020	Wood screen, 20 mm frames over 0.25 M2	SQM	0.125 Skilled Foreman 2.000 Carpenters 1.000 Helper 2.000 Power Tools	30.000	35.000	32.500	0.533
086 152-0100	Wood screen, 30 mm frames over 0.25 M2			30.000	35.000	32.500	0.533
<b>087 HARDWARE</b>							
<b>087 100 FINISH HARDWARE</b>							

# **DIVISION 08 :DOORS & WINDOWS**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVERG.	AVRG. E.H.
<b>087 103</b>	<b>BOLTS,FLUSH:</b>						
087 103-0010	Bolts,flush,standard,concealed	EA	0.125 Skilled Foreman 1.000 Carpenter 1.000 Power Tools	6.500	8.000	7.250	1.231
087 103-0800	Bolts,flush,automatic fire exit		*	4.750	5.000	4.875	1.684
087 103-1600	Bolts,flush,for electric release		0.125 Skilled Foreman 1.000 Carpenter 0.250 Electrician 1.000 Power Tools	2.750	3.000	2.875	2.909
<b>087 105</b>	<b>BUMPER PLATES:</b>						
087 105-0100	Bumper plates, 40 mm x 20 mm, U channel	EA	0.125 Skilled Foreman 2.000 Carpenters 1.000 Helper 2.000 Power Tools	22.000	25.000	23.500	0.727
087 105-1000	Bumper plates,lear drop,spring-steel,upto 255 mm high			14.000	16.000	15.000	1.143
<b>087 108</b>	<b>DEADLOCKS:</b>						
087 108-1000	Deadlocks,mortise or tubular,outside key	EA	0.125 Skilled Foreman 1.000 Carpenter 1.000 Power Tools	9.000	10.000	9.500	0.889
<b>087 110</b>	<b>DOORSTOPS:</b>						
087 110-1300	Doorstops,wall or floor type or plunger type	EA	0.125 Skilled Foreman 1.000 Carpenter 1.000 Power Tools	22.000	25.000	23.500	0.364
<b>087 112</b>	<b>ENTRANCE LOCKS:</b>						
087 112-0020	Entrance locks,cylinder,grip handle,deadbolt	EA	0.125 Skilled Foreman 1.000 Carpenter	7.500	9.000	8.250	0.000
<b>087 114</b>	<b>FLOOR CHECKS:</b>						
087 114-0010	Floor checks,for over 915mm wide doors,single or double acting	EA	0.125 Skilled Foreman 1.000 Carpenter 1.000 Power Tools	2.250	3.000	2.625	3.556
<b>087 118</b>	<b>KICK PLATE:</b>						
087 118-0010	Kick plate,150mm high, for 915mm door, stainless steel or bronze	EA	0.125 Skilled Foreman 1.000 Carpenter	14.000	16.000	15.000	0.000
<b>087 120</b>	<b>LOCKSET:</b>						
087 120-0400	Lockset standard duty,cylindrical,with sectional trim,keyed,single cylinder function	EA	0.125 Skilled Foreman 1.000 Carpenter 1.000 Power Tools	9.000	10.000	9.500	0.889
087 120-0420	Lockset standard duty,cylindrical,with sectional trim,keyed,single cylinder function hotel style			7.500	9.000	8.250	0.000
087 120-1700	Lockset standard duty,cylindrical for residential,interior door, average		0.125 Skilled Foreman 1.000 Carpenter	11.000	13.000	12.000	0.000
087 120-1800	Lockset standard duty,cylindrical for residential,exterior door, average			10.000	12.000	11.000	0.000
<b>087 125</b>	<b>MORTISE LOCKSET:</b>						
087 125-0100	Mortise lockset,wrought knobs & full escutcheon trim,keyed,office/ apartment entrance,average	EA	0.125 Skilled Foreman 1.000 Carpenter 1.000 Power Tools	6.500	8.000	7.250	1.231
087 125-0200	Mortise lockset,wrought knobs & full escutcheon trim,hotel,average			5.500	6.000	5.750	1.455
087 125-1000	Mortise Lockset,wrought knobs and sectional trim,non-keyed,entrance,office/apartment average			7.500	9.000	8.250	0.000
087 125-2210	Mortise Lockset,cast knobs and full escutcheon trim,non-keyed,single cylinder,hotel average			5.500	6.000	5.750	0.000
<b>087 127</b>	<b>PANIC DEVICE:</b>						
087 127-0200	Panic device,for rim locks,bar and vertical or concealed rod,exit only	EA	0.125 Skilled Foreman 1.000 Carpenter 1.000 Power Tools	3.750	4.000	3.875	2.133
087 127-1000	Panic device,for mortise locks,bar,exit only			3.750	4.000	3.875	0.000
<b>087 129</b>	<b>PUSH - PULL:</b>						
087 129-0010	Push-plate,pull plate,aluminum or bronze	EA	0.125 Skilled Foreman 1.000 Carpenter 1.000 Power Tools	11.000	13.000	12.000	0.727
087 129-3000	Push plate both sides,aluminum or bronze			12.000	14.000	13.000	0.000
<b>087 200</b>	<b>OPERATORS</b>						
<b>087 202</b>	<b>AUTOMATIC OPENERS:</b>						
087 202-1000	Automatic openers,sliding doors, 915 mm wide,including track & hanger,single	OPENING	0.125 Skilled Foreman 2.000 Carpenters 1.000 helper 2.000 Power Tools	0.550	1.000	0.775	29.091
087 202-1300	Automatic openers,sliding doors, 915 mm wide,including track & hanger,bi-parting			0.450	1.000	0.725	4.656
087 202-1750	Automatic openers,handicap opener,button operating			0.550	1.000	0.775	29.091
<b>087 204</b>	<b>AUTOMATIC OPERATORS:</b>						



# **DIVISION 08 :DOORS & WINDOWS**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVERG.	AVRG. E.H.
087 204-0200	Automatic Operators, industrial, sliding doors, to 3.6 m wide	OPENING	0.125 Skilled Foreman 2.000 Carpenters 1.000 Helper 2.000 Power Tools	0.350	0.500	0.425	45.714
087 204-1000	Automatic Operators, industrial, swing doors, to 1.5 m wide	"	"	0.650	1.000	0.825	24.615
<b>087 206</b>	<b>DOOR CLOSER:</b>						
087 206-0010	Door closer, rack and pinion, adjustable backcheck, all sizes, regular or hold open arm	EA	0.125 Skilled Foreman 1.000 Carpenter 1.000 Power Tools	5.500	6.000	5.750	1.455
087 206-0100	Door closer, rack and pinion, adjustable backcheck, all sizes, fusible link	"	"	6.000	7.000	6.500	1.333
087 206-4000	Door closer, backcheck, overhead concealed, all sizes, concealed arm	↓	↓	4.750	5.000	4.675	1.684
<b>087 300</b>	<b>WEATHERSTRIPPING/SEALS</b>						
<b>087 302</b>	<b>ASTRAGALS:</b>						
087 302-0400	Astragals, one piece overlapping, cadmium plated steel or aluminum, flat, 5 mm x 50 mm or 3 mm x 75 mm	LM	0.125 Skilled Foreman 1.000 Carpenter 1.000 Power Tools	25.000	29.000	27.000	0.320
087 302-1200	Astragals, one piece overlapping, Aluminum, nail on, "T" extrusion, 3 mm x 50 mm	"	"	33.000	38.000	35.500	0.242
087 302-1300	Astragals, one piece overlapping, Aluminum, vinyl bulb insert, 3 mm x 50 mm	"	"	30.000	35.000	32.500	0.267
087 302-2400	Astragals, one piece overlapping, Aluminum, spring hinged security seal, with cam, 3 mm x 50 mm	"	"	20.000	23.000	21.500	0.400
087 302-2600	Astragals, one piece overlapping, Aluminum, spring loaded locking bolt, vinyl insert, 3 mm x 50 mm	"	"	12.000	14.000	13.000	0.667
087 302-2800	Astragals, one piece overlapping, Neoprene sponge strip, "Z" shaped, aluminum	"	"	16.000	18.000	17.000	0.500
087 302-4000	Astragals, one piece stile protection, extruded aluminum retainer, flush mount, pile insert	↓	↓	30.000	35.000	32.500	0.267
<b>087 304</b>	<b>THRESHOLD:</b>						
087 304-0010	Threshold, 915 mm long door saddies, aluminum, bronze or rubber, average	EA	0.125 Skilled Foreman 1.000 Carpenter 1.000 Power Tools	11.000	13.000	12.000	0.727
<b>087 306</b>	<b>WEATHERSTRIPPING:</b>						
087 306-0010	Weatherstripping, window, 915 mm x 1.5 m, zinc or bronze	OPENING	0.125 Skilled Foreman 1.000 Carpenter 1.000 Power Tools	6.500	7.000	6.750	1.231
087 306-0500	Weatherstripping, window, 915 mm x 1.5 m, heavy duty, zinc	"	"	4.250	5.000	4.625	1.882
087 306-1000	Weatherstripping, doors, wood frame, interlocking, for 915 mm x 2.1 m door, zinc or bronze	"	"	2.750	3.000	2.875	2.909
087 306-1300	Weatherstripping, doors, wood frame, interlocking, 1.8 m x 2.1 m	↓	↓	1.900	2.000	1.950	4.211
087 306-1800	Weatherstripping, doors, wood frame, spring type, bronze, 915 mm x 2.1 m door	OPENING	0.125 Skilled Foreman 1.000 Carpenter 1.000 Power Tools	7.000	8.000	7.500	1.143
087 306-1900	Weatherstripping, doors, metal frame, spring type, bronze, 1.8 m x 2.1 m door	"	"	2.250	3.000	2.625	3.556
<b>087 400</b>	<b>DOORS COMPLETE HARDWARE SET</b>						
<b>087 405</b>	<b>SINGLE LEAF DOOR:</b>						
087 405-0050	Complete hardware set for interior door including 3 hinges, lockset & door closer	EA	0.125 Skilled Foreman 1.000 Carpenter 1.000 Power Tools	16.000	18.000	17.000	0.188
087 405-0100	Complete hardware set for fire doors including 3 hinges & panic device	"	"	11.000	13.000	12.000	0.182
087 405-0200	Complete hardware set for exterior door including 3 hinges, keyed lockset, with handle, weather stripping & exterior pull bar	↓	↓	10.000	12.000	11.000	0.200
<b>087 410</b>	<b>DOUBLE LEAF DOORS:</b>						
087 410-0050	Complete hardware set, interior door including 6 hinges, lockset keyed with handles and floor door stop	EA	0.125 Skilled Foreman 1.000 Carpenter 1.000 Power Tools	2.000	3.000	2.500	4.000
087 410-0100	Complete hardware set, exterior door, including 6 hinges, lockset keyed with handle, weather stripping & one exterior pull handle bar	"	"	1.000	2.000	1.500	8.000
<b>087 500</b>	<b>DOOR/WINDOW ACCES.</b>						
<b>087 501</b>	<b>WINDOW GRATING:</b>						
087 501-0100	Steel window security grating anchored to walls, @7 kg/m2 welded & painted	SQM	0.25 Skilled Foreman 1.00 Skilled Worker 1.00 Painter 1.00 Laborer	23.000	26.000	24.500	0.000
<b>087 504</b>	<b>DETECTION SYSTEMS</b>	See division 168120					
<b>088</b>	<b>GLAZING</b>						
<b>088 100</b>	<b>GLASS</b>						
<b>088 108</b>	<b>BEVELED GLASS:</b>						
088 108-0010	Beveled glass design patterns, 6 mm thick, 13 mm bevel, average	SQM	0.125 Skilled Foreman 2.000 Glaziers 1.000 Helper 2.000 Power Tools	11.250	13.000	12.125	1.422
<b>088 112</b>	<b>CURTAIN WALL</b>	See division 089200					
<b>088 118</b>	<b>FLOAT GLASS:</b>						

# **DIVISION 08 :DOORS & WINDOWS**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVERG.	AVRG. E.H.
088 118-0600	Float glass, 6 mm thick,clear,plain or tempered	SQM	0.125 Skilled Foreman 2.000 Glaziers 1.000 Helper 2.000 Power Tools	11.000	13.000	12.000	1.455
088 118-1600	Float glass, 10 mm thick,clear,plain,tinted or tempered			6.500	7.000	6.750	2.462
088 118-2600	Float glass, 16 mm thick,clear,plain,tinted or tempered			3.900	4.000	3.950	4.103
088 118-3600	Float glass, 25 mm thick,clear,plain			2.800	3.000	2.900	5.714
<b>088 124 GLASS BLOCK</b>	<i>See division 042704</i>						
<b>088 132 INSULATING GLASS:</b>							
088 132-0020	Insulating glass, 13 mm thick,under 1.5 m2 clear or tinted	SQM	0.125 Skilled Foreman 2.000 Glaziers 1.000 Helper 2.000 Power Tools	8.250	10.000	9.125	1.939
088 132-0400	Insulating glass, 25 mm thick,double glazed,6mm float 3 to 7 m2, clear or tinted			6.500	7.000	6.750	2.462
088 132-0600	Insulating glass, 25 mm thick double glazed, 6 mm float,6mm wire			6.500	7.000	6.750	2.462
088 132-2500	Insulating glass,heat reflective,film inside, 25 mm thick unit,clear or tinted			7.500	9.000	8.250	2.133
<b>088 136 LAMINATED GLASS:</b>							
088 136-0010	Laminated glass,clear float, 0.76 mm vinyl, 6 mm thick	SQM	0.125 Skilled Foreman 2.000 Glaziers 1.000 Helper 2.000 Power Tools	7.500	9.000	8.250	2.133
088 136-0100	Laminated glass,clear float, 0.76 mm vinyl, 10 mm thick			6.500	7.000	6.750	2.462
088 136-1000	Laminated glass,clear float, 2mm vinyl, 16mm thick			7.500	9.000	8.250	2.133
088 136-2000	Laminated glass,bullet-resisting, 30 mm thick			1.350	2.000	1.675	11.852
088 136-2500	Laminated glass,bullet-resisting, 55 mm thick			1.000	2.000	1.500	16.000
<b>088 140 LEAD GLASS For X-ray,</b>	<i>See division 130911</i>						
<b>088 144 MIRRORS:</b>							
088 144-0100	Mirrors,no frames,wall type, 6 mm plate glass,polished edge upto 0.5 m2	SQM	0.125 Skilled Foreman 2.000 Glaziers 1.000 Helper 2.000 Power Tools	10.000	12.000	11.000	1.600
088 144-0200	Mirrors,no frames,wall type, 6 mm plate glass,polished edge over 0.5 m2			14.000	16.000	15.000	1.143
088 144-0500	Mirrors,no frames,door type, 6 mm plate glass,upto 1.20 m2			14.000	16.000	15.000	1.143
088 144-1100	Mirrors,no frames,float glass,upto 1 m2, 5 mm thick			14.000	16.000	15.000	1.143
088 144-2000	Mirrors,float glass, 6 mm thick one way transparent			11.000	13.000	12.000	1.455
088 144-2010	Mirrors,float glass, 8 mm thick, bathroom,unframed,laminated			14.000	16.000	15.000	1.143
<b>088 148 OBSCURE GLASS:</b>							
088 148-0010	Obscure glass, 3 mm thick,average	SQM	0.125 Skilled Foreman 2.000 Glaziers 1.000 Helper 2.000 Power Tools	11.000	13.000	12.000	1.455
088 148-0100	Obscure glass, 6 mm thick,average			10.000	12.000	11.000	1.600
<b>088 152 PATTERNED GLASS:</b>							
088 152-0010	Patterned glass colored, 3 mm thick,average	SQM	0.125 Skilled Foreman 2.000 Glaziers 1.000 Helper 2.000 Power Tools	11.000	13.000	12.000	1.455
088 152-0300	Patterned glass colored, 6 mm thick,average			10.000	12.000	11.000	1.600
<b>088 160 REFLECTIVE GLASS:</b>							
088 160-0010	Reflective glass 6 mm float with fused metallic oxide,tinted	SQM	0.125 Skilled Foreman 2.000 Glaziers 1.000 Helper 2.000 Power Tools	10.000	12.000	11.000	1.600
088 160-0500	Reflective glass 6 mm float glass with reflective applied coating			10.000	12.000	11.000	1.600
088 160-2000	Reflective glass,solar film on glass,average			15.000	19.000	17.500	1.000
<b>088 164 SANDBLASTED GLASS:</b>							
088 164-0100	Sandblasted glass,float glass, 5 mm thick	SQM	0.125 Skilled Foreman 2.000 Glaziers 1.000 Helper 2.000 Power Tools	11.000	13.000	12.000	1.455
088 164-0500	Sandblasted glass,plate glass, 6 mm thick			10.000	12.000	11.000	1.600
088 164-0600	Sandblasted glass,plate glass, 10 mm thick			6.500	7.000	6.750	2.462
<b>088 168 SHEET GLASS:</b>							
088 168-0010	Sheet Glass gray, 3 mm thick	SQM	0.125 Skilled Foreman 2.000 Glaziers 1.000 Helper 2.000 Power Tools	14.000	16.000	15.000	1.143
088 168-0200	Sheet Glass gray, 6 mm thick			11.000	13.000	12.000	1.455



## DIVISION 08 :DOORS & WINDOWS

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVERG.	AVRG. E.H.
<b>088 172</b>	<b>SPANDREL GLASS:</b>						
088 172-0010	Spandrel glass,standard color, 6 mm thick,over 200 m2	SQM	0.125 Skilled Foreman 2.000 Glaziers 1.000 Helper 2.000 Power Tools	11.000	13.000	12.000	1.455
088 172-0200	Spandrel glass, 6 mm thick,standard colors,under 200 m2			10.000	12.000	11.000	1.600
088 172-0300	Spandrel glass,ceramic,10 mm over 200 m2			9.000	10.000	9.500	1.778
088 172-2100	Spandrel glass panels,insulated,with aluminum backed fiberglass,upto 50 mm thick			10.000	12.000	11.000	1.600
<b>088 176</b>	<b>WINDOW GLASS:</b>						
088 176-0100	Window glass,clear float,stops,putty bed 6 mm thick	SQM	0.125 Skilled Foreman 2.000 Glaziers 1.000 Helper 2.000 Power Tools	40.000	46.000	43.000	0.400
<b>088 180</b>	<b>WINDOW WALL</b>						
	<i>See division 089200</i>						
<b>088 184</b>	<b>WIRE GLASS:</b>						
088 184-0010	Wire glass, 6 mm thick,rough obscure (chicken wire)	SQM	0.125 Skilled Foreman 2.000 Glaziers 1.000 Helper 2.000 Power Tools	11.000	13.000	12.000	1.455
088 184-1000	Wire glass,polished wire, 6 mm thick,diamond,clear			11.000	13.000	12.000	1.455
<b>088 400</b>	<b>PLASTIC GLAZING</b>						
<b>088 404</b>	<b>PLEXIGLASS ACRYLIC:</b>						
088 404-0200	Plexiglass Acrylic,clear,masked, 3 mm thick,full sheets	SQM	0.125 Skilled Foreman 2.000 Glaziers 1.000 Helper 2.000 Power Tools	17.000	20.000	18.500	0.941
088 404-0500	Plexiglass Acrylic,clear,masked, 6 mm thick,cut sheets			14.000	16.000	15.000	1.143
088 404-0900	Plexiglass Acrylic,clear,masked, 10 mm thick,cut sheets			13.000	15.000	14.000	1.231
088 404-1700	Plexiglass Acrylic,clear,masked, 20 mm thick,cut sheets	SQM	0.125 Skilled Foreman 2.000 Glaziers 1.000 Helper 2.000 Power Tools	10.000	12.000	11.000	1.600
088 404-2100	Plexiglass Acrylic,clear,masked, 25 mm thick,cut sheets			9.000	10.000	9.500	1.778
<b>088 408</b>	<b>POLYCARBONATE:</b>						
088 408-0010	Polycarbonate clear,masked,cut sheets, 3 mm thick	SQM	0.125 Skilled Foreman 2.000 Glaziers 1.000 Helper 2.000 Power Tools	15.000	17.000	16.000	1.067
088 408-1000	Polycarbonate clear,masked,cut sheets, 6 mm thick			13.000	15.000	14.000	1.231
088 408-1500	Polycarbonate clear,masked,cut sheets, 10 mm thick	SQM	0.125 Skilled Foreman 2.000 Glaziers 1.000 Helper 2.000 Power Tools	12.750	15.000	13.875	1.255
<b>088 412</b>	<b>VINYL GLASS:</b>						
088 412-0500	Vinyl glass,steel mesh reinforced,stock sizes, 3 mm thick	SQM	0.125 Skilled Foreman 2.000 Glaziers 1.000 Helper 2.000 Power Tools	15.000	17.000	16.000	1.067
088 412-1000	Vinyl glass,steel mesh reinforced, 6 mm thick			13.000	15.000	14.000	1.231
<b>089</b>	<b>GLAZED CURTAIN WALL</b>						
<b>089 200</b>	<b>GLAZED CURTAIN WALL</b>						
<b>089 202</b>	<b>CURTAIN WALLS:</b>						
089 202-0050	Curtain walls,Aluminum,single glazed,upto 10 floors,average	SQM	0.125 Skilled Foreman 2.000 Glaziers 1.000 Helper 2.000 Power Tools	9.500	11.000	10.250	1.684
089 202-0150	Curtain walls,Aluminum,double glazed, up to 10 floors,average			8.500	10.000	9.250	1.882
089 202-0200	Curtain walls,Aluminum,single glazed,upto 10 floors, curved,average			6.500	7.000	6.750	2.462
089 202-0300	Curtain walls,Aluminum,double glazed,curved wall,upto 10 floors,average			5.500	6.000	5.750	2.909
089 202-0400	Curtain walls,Aluminum,single glazed,more than 10 floors building,average			3.750	4.000	3.875	4.267
089 202-0500	Curtain walls,Aluminum,double glazed,more than 10 floors building,average			2.900	3.000	2.950	5.517
089 202-1000	Curtain walls,Stainless steel,single glazed,upto 12 m high,average			7.500	9.000	8.250	2.133
089 202-1200	Curtain walls,Stainless steel,double glazed,upto 12 m high,average			7.000	8.000	7.500	2.286
<b>089 204</b>	<b>TUBE FRAMING:</b>						
089 204-0050	Tube framing,for window walls and store fronts,aluminum plain tube frame,mill finish, 45 mm x 45 mm	SQM	0.125 Skilled Foreman 2.000 Glaziers 1.000 Helper 2.000 Power Tools	29.000	33.000	31.000	0.552
089 204-0150	Tube framing,for window walls and store fronts,aluminum plain tube frame,mill finish, 45 mm x 100 mm			26.000	30.000	28.000	0.615

**DIVISION 08 :DOORS & WINDOWS**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVERG.	AVRG. E.H.
089 204-0250	Tube framing,for window walls and store fronts,aluminum plain tube frame,mill finish, 50 mm x 150 mm			24.000	28.000	26.000	0.657
089 204-0450	Tube framing,glass bead			70.000	81.000	75.500	0.229
089 204-1000	Tube framing,flush tube mill finish, for 6 mm glass, 45 mm x100mm,open header			22.000	25.000	23.500	0.727
089 204-1050	Tube framing,flush tube mill finish,for 6 mm glass, 45 mmx100mm,open sill			23.000	26.000	24.500	0.696
089 204-1150	Tube framing,flush tube mill finish,for 6 mm glass, 45 mm x100 mm,closed back sill			24.000	28.000	26.000	0.667
089 204-1200	Tube framing,flush tube mill finish,for 6 mm glass, 45mm x100mm,vertical mullion two piece			21.000	24.000	22.500	0.762
089 204-2000	Tube framing,flush tube frame, mill finish, 50 mm x 115 mm,open header			21.500	25.000	23.250	0.744
089 204-5000	Tube framing,flush tube mill finish, 55 mm x 115 mm,open sill			22.000	25.000	23.500	0.727
<b>089 206</b>	<b>WINDOW WALLS:</b>						
089 206-0050	Window walls,aluminum,stock,including glazing average	SQM	0.125 Skilled Foreman 2.000 Glaziers 1.000 Helper 2.000 Power Tools	9.000	10.000	9.500	1.778
089 206-0100	Acoustical window wall,aluminum,double glazed 25 mm thick, 50 mm x 115 mm framing for airports	"	"	3.000	4.000	3.500	5.333



A decorative geometric pattern, likely a traditional Islamic or Arabesque design, is located in the top right corner of the page. It features a complex, repeating lattice of lines forming various polygons and star-like shapes. The pattern is rendered in a dark, textured style, possibly a woodcut or a high-contrast print. A thin, vertical red line runs down the center of the page, passing behind the text.

# Division 9

## Finishing



# MUROSTONE TECH. LTD.

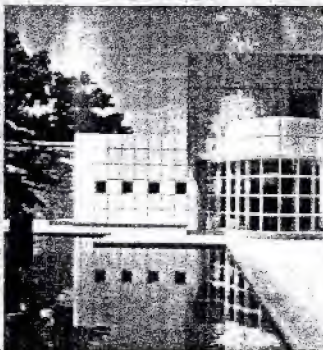
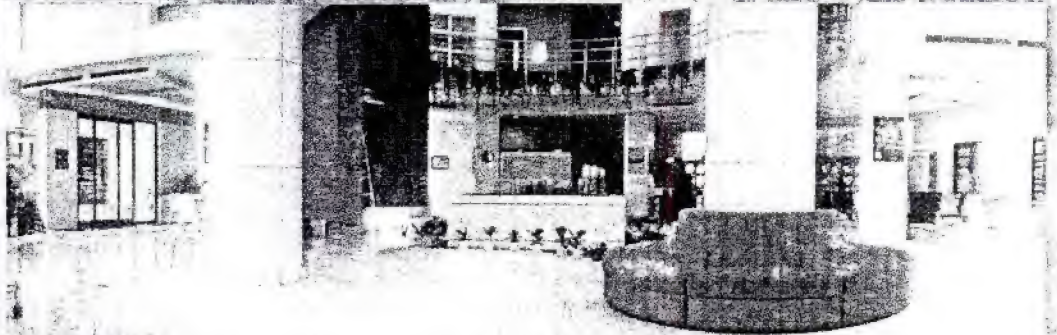
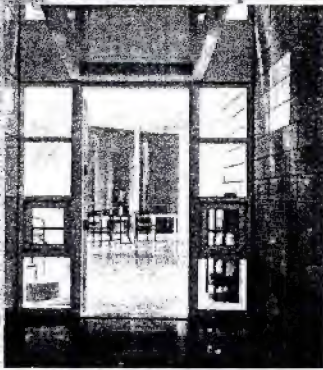
**SMART  
STONE**  
SMART MARBLE CHOICE

**GLASS  
STONE**

SURFACES FOR  
THE NEW MILLENNIUM  
**QUARTSTONE**

مروستون  
تقنية  
الرخام  
والصخور  
الطبيعية  
والاصطناعية  
والزجاج  
والصين  
والسيراميك  
والخشب

منتجات مروستون



**SURFACES FOR THE NEW MILLENNIUM**

شركة مروستون للصخور المحدودة  
إحدى شركات الربعة والنصار وشركاهم  
**MURO Stone Tech. Ltd. Co.**

e-mail: [sale@murostone.com](mailto:sale@murostone.com)  
[www.murostone.com](http://www.murostone.com)

+ 966 1 4911028

+ 966 1 4912037

ص ب ٢٨٨٩ الرياض ١١٤٦١ - المملكة العربية السعودية  
P.O. Box 2889 Riyadh 11461 - K.S.A.



## Division 9.. Finishing..

### Estimating Tips:

#### 092 Lath, Plaster & Gypsum Board:

Lath is estimated by the square meter for both gypsum and metal lath, plus usually 5% allowance for waste. Furring, channels and accessories are measured by the linear meter. Plaster is also estimated by square meter.

Deduction for openings vary by preference, from zero deduction to 50% of all openings over 60 centimeters. Many plastering contractors make no deduction for openings. The estimator should allow one extra square meter for each linear meter of horizontal interior or exterior angle located below the ceiling level. Also, double the areas of small radius work.

Metal lath cost and productivity vary according to complexity of work, location, room sizes, height above floor and method of attachments whether nails or tie-on. Plaster coverage area depends usually on mechanic application system, thickness of grounds, surface, type of lath, and quality of sand.

Each room should be measured, perimeter times maximum wall height. Ceiling areas are equal to length times width. Drywall, accessories, studs, track, and acoustical caulking are all measured by the square meter.

#### 093 Tile.

#### 094 Terrazzo:

Two basic methods of installation are used.

Mud set is more expensive than the thin set. In terrazzo work, be sure to include the linear metrage of embedded decorative strips, grounds, machine rubbing and power clean-up. Add for material handling and labor distribution in high-rise buildings.

#### 095 Acoustical System:

Acoustical systems fall into several categories.

The take-off of these materials is by the square meter of area with a 5% allowance for waste. Do not forget about scaffolding, if applicable, when estimating these systems.

#### 096 Flooring & Carpet:

Most of the various types of flooring are all measured on square meter basis. base is measured by linear meter. If adhesive materials are to be quantified, they are estimated at a specific coverage rate by the gallon depending upon the specified type and the manufacturer's recommendations.

#### 099 Painting & Wall Coverings:

Painting is one area where bids vary to a greater extent than almost any other section of a project. This arises from the many methods of measuring surfaces to be painted. Estimators shall never forget to include the protection of all adjacent surfaces in estimated costs and productivity.

When considering the method of paint application, an important factor is the amount of protection and masking required. These must be estimated separately and may be the determining factor in choosing the method of application. Scaffolding and ladders shall be estimated.

# **DIVISION 09: FINISHES**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
<b>091</b>	<b>METAL SUPPORT SYSTEM</b>						
<b>091 300</b>	<b>SUSPENSION SYSTEMS</b>						
<b>091 304</b>	<b>SUSPENSION SYSTEMS:</b>						
091 304-0050	Suspension systems for boards and tile,, T bar, 610 mm x 1220 mm grid	SQM	0.125 Labor Foreman 1.000 Carpenter 1.000 Helper	55.000	63.000	59.000	0.145
091 304-0300	Suspension systems for boards and tile, T bar, 610 mm x 610 mm grid			45.000	52.000	48.500	0.178
091 304-0400	Suspension systems for boards and tile, concealed Z bar, 300 mm module			40.000	46.000	43.000	0.200
091 304-0600	Suspension systems for boards and tile, 38 mm carrier channels, 1220 mm O.C, add			40.000	46.000	43.000	0.200
<b>092</b>	<b>LATH,PLASTER &amp; GYPSUM BOARD</b>						
<b>092 050</b>	<b>FURRING &amp; LATHING</b>						
<b>092 052</b>	<b>ACCESSORIES,PLASTER:</b>						
092 052-0100	Accessories plaster,casing bead,expanded flange,galvanized or zinc alloy	LM	0.125 Labor Foreman 1.000 Lather 1.000 Power Tools	80.000	92.000	86.000	0.100
092 052-0620	Accessories plaster,corner bead,expanded bullnose, 20 mm radius,galvanized			75.000	86.000	80.500	0.107
092 052-1640	Accessories plaster,corner bead,expanded bullnose, 20 mm radius, zinc alloy			80.000	92.000	86.000	0.100
092 052-1700	Accessories plaster,inside corner bead, 20 mm, 76 mm x 76 mm,painted			75.000	86.000	80.500	0.107
<b>092 054</b>	<b>FURRING:</b>						
092 054-0050	Furring beams & columns, 20 mm channels, galvanized, 400 mm O.C	SQM	0.125 Labor Foreman 1.000 Lather 1.000 Helper 1.000 Power Tools	23.000	26.000	24.500	0.348
092 054-0300	Furring ceilings,on steel 20 mm channels,galvanized 400 mm O.C.			32.000	37.000	34.500	0.250
092 054-0600	Furring ceilings,on steel 38 mm channels,galvanized 300 mm O.C.			21.000	24.000	22.500	0.381
092 054-0900	Furring ceilings,on steel 38 mm channels,galvanized 610 mm O.C.			64.000	74.000	69.000	0.125
092 054-1200	Furring walls, 20 mm channels,galvanized, 400 mm O.C			30.000	35.000	32.500	0.267
092 054-1300	Furring walls, 20 mm channels,galvanized, 610 mm O.C			45.000	52.000	48.500	0.178
092 054-1500	Furring walls, 38 mm channels,galvanized, 300 mm O.C.			24.000	28.000	26.000	0.333
092 054-1800	Furring walls, 38 mm channels,galvanized, 610 mm O.C.			48.000	55.000	51.500	0.167
092 054-8000	Furring suspended ceilings,including 38mm carriers, 610 mm O.C. with 20 mm channels, 400 mm O.C.			15.380	18.000	16.690	0.520
092 054-8400	Furring suspended ceilings,including 38 mm carriers, 610 mm O.C. with 38 mm channels, 400 mm O.C.			13.330	15.000	14.165	0.600
092 054-8720	Furring suspended ceilings,including 50 mm carriers, 610 mm O.C. with 20 mm channels, 610 mm O.C.			18.000	21.000	19.500	0.444
092 054-8800	Furring suspended ceilings,including 50 mm carriers, 610 mm O.C with 38 mm channels, 400 mm O.C.			13.460	15.000	14.230	0.594
<b>092 056</b>	<b>GYPSUM LATH:</b>						
092 056-0300	Gypsum lath, plain or perforated,clipped to steel studs, 10 mm thick	SQM	0.125 Labor Foreman 1.000 Lather 1.000 Helper 1.000 Power Tools	90.000	104.000	97.000	0.089
092 056-0400	Gypsum lath, plain or perforated,clipped to steel studs, 13 mm thick			83.250	96.000	89.625	0.096
092 056-1500	Gypsum lath,for ceiling installations, 13 mm thick			67.500	78.000	72.750	0.119
092 056-1600	Gypsum lath,for columns and beams, 13 mm thick			60.750	70.000	65.375	0.132
<b>092 058</b>	<b>METAL LATH:</b>						
092 058-3600	Metal lath, 1.13 kg diamond painted, on wood framing, on walls	SQM	0.125 Labor Foreman 2.000 Lather 1.000 Helper 1.000 Power Tools	180.000	207.000	193.500	0.044
092 058-3400	Metal lath, 1.54 kg diamond painted, on wood framing, on ceilings			153.000	176.000	164.500	0.052
092 058-4200	Metal lath, 1.54 kg diamond painted or rib, wired to steel framing, on walls			165.000	190.000	177.500	0.048
092 058-4300	Metal lath, 1.54 kg diamond painted, wired to steel framing, on ceilings			140.000	161.000	150.500	0.057
092 058-4500	Metal lath, 1.54 kg diamond painted on columns and beams,wired to steel			82.000	94.000	88.000	0.096
092 058-4600	Metal lath, 1.54 kg diamond painted on cornices,wired to steel			66.000	78.000	73.000	0.118
092 058-4800	Metal lath, 1.13 kg diamond painted on screwed to steel studs			170.000	195.000	182.500	0.047
092 058-5100	Metal lath, rib lath, painted, wired to steel,on walls, 1.25 kg			158.000	182.000	170.000	0.051
092 058-5400	Metal lath,rib lath,painted, wired to steel,on walls, 1.81 kg			145.000	167.000	156.000	0.053
092 058-5700	Suspended ceiling system, including 1.54 kg diamond lath,painted or galvanized			25.600	29.000	27.300	0.313
092 058-6300	Hollow metal stud partitions,including 1.54 kg painted lath both sides,non-load bearing, 25 ga. with rib lath studs 64 mm at 400 mm O.C.			36.300	42.000	39.150	0.220



# **DIVISION 09: FINISHES**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVR	AVRG. E. H.
092 058-6700	Hollow metal stud partitions, including 1.54 kg painted lath both sides, non-load bearing, 25 ga. with rib lath studs 100 mm at 400 mm O.C.			35.100	40.000	37.550	0.228
092 058-7000	Hollow metal stud partitions, including 1.54 kg painted lath both sides, non-load bearing, 25 ga. with rib lath studs 150 mm at 400 mm O.C.			34.400	40.000	37.200	0.233
092 058-7100	Hollow metal stud partitions, including 1.54 kg painted lath both sides, non-load bearing, 25 ga. with rib lath studs 150 mm at 610 mm O.C.	SQM	0.125 Labor Foreman 2.000 Lather 1.000 Helper 1.000 Power Tools	39.300	45.000	42.150	0.204
092 058-7200	Load bearing partitions, 16 ga., with rib lath, 100 mm studs, 400 mm O.C.			23.400	27.000	25.200	0.342
092 058-7600	Load bearing partitions, 16 ga., with rib lath, 100 mm studs, 150 mm O.C.			22.900	26.000	24.450	0.349
<b>092 100</b>	<b>GYPSUM PLASTER</b>						
<b>092 102</b>	<b>CEMENT PLASTER:</b>						
092 102-0150	Cement plaster, splash coat on exterior concrete or masonry walls	SQM	0.125 Foreman 1.000 Plasterer 1.000 Common Laborer 0.500 Mixer 0.17 m3 1.000 Tools Set 1.000 Scaffolding set	90.000	104.000	97.000	0.222
092 102-0200	Cement plaster, splash coat on interior concrete or masonry walls			80.000	92.000	86.000	0.250
092 102-0220	Cement plaster, brown coat, on interior concrete or masonry walls			50.000	58.000	54.000	0.400
092 102-0250	Cement plaster, float finish coat, on interior concrete or masonry walls			35.000	40.000	37.500	0.571
092 102-0280	Cement plaster, trowel finish coat, on exterior concrete walls & columns			25.000	29.000	27.000	0.800
092 102-0300	Cement plaster, finish coat, on interior concrete walls & columns			24.380	26.000	26.190	0.820
092 102-0400	Cement plaster accessories			150.000	173.000	161.500	0.133
092 102-0500	Cement plaster on exterior concrete or masonry walls, 3 coats including accessories			13.490	16.000	14.745	1.483
092 102-0600	Cement plaster on interior concrete or masonry walls, 3 coats including accessories			11.740	14.000	12.870	1.704
092 102-0700	Cement plaster on concrete ceilings, 3 coats including accessories			11.150	13.000	12.075	1.794
092 102-0800	Cement plaster on concrete columns and beams, 3 coats including accessories			8.800	10.000	9.400	2.273
<b>092 108</b>	<b>GYPSUM PLASTER:</b>						
092 108-0300	Gypsum plaster, 2 coats, no lath included, on walls	SQM	0.125 Foreman 3.000 Plasterer 2.000 Common Laborer 0.500 Mixer 0.17 m3 2.000 Tools Set 1.000 Scaffolding set	65.880	76.000	70.940	0.425
092 108-0400	Gypsum plaster, 2 coats, no lath included, on ceilings			57.640	66.000	61.820	0.486
092 108-0600	Gypsum plaster, 2 coats on and including 10 mm gypsum lath on steel, on walls			58.300	67.000	62.650	0.549
092 108-0700	Gypsum plaster, 2 coats on and including 10 mm gypsum lath on steel, on ceilings			49.560	57.000	53.280	0.646
092 108-0900	Gypsum plaster, 3 coats, no lath included, on walls			56.400	65.000	60.700	0.567
092 108-1000	Gypsum plaster, 3 coats, no lath included, on ceilings			49.340	57.000	53.170	0.649
092 108-1200	Gypsum plaster, 3 coats and including painted metal lath, on wood studs			50.330	58.000	54.165	0.636
092 108-1300	Gypsum plaster, 3 coats, including painted metal lath, on ceilings			44.000	51.000	47.500	0.727
092 108-1600	Gypsum plaster, 3 coats, including painted metal lath, on irregular or curved surfaces			38.000	44.000	41.000	0.842
092 108-1800	Gypsum plaster, 3 coats, including painted metal lath, on columns and beams			36.650	42.000	39.325	0.873
<b>092 116</b>	<b>PERLITE OR VERMICULITE PLASTER:</b>						
092 116-1200	Perlite or vermiculite plaster, 3 coats, including painted metal lath, on metal studs	SQM	0.125 Foreman 3.000 Plasterer 2.000 Common Laborer 0.500 Mixer 0.17 m3 2.000 Tools Set 1.000 Scaffolding set	57.600	66.000	61.800	0.556
092 116-1500	Perlite or vermiculite plaster, 3 coats, including suspended metal lath ceilings			38.500	44.000	41.250	0.831
092 116-1700	Perlite or vermiculite plaster, 3 coats, including painted metal lath on irregular or curved surfaces			33.300	38.000	35.650	0.961
092 116-1800	Perlite or vermiculite plaster, 3 coats, including painted metal lath on columns and beams			32.000	39.000	35.500	1.000
<b>092 300</b>	<b>AGGREGATE COATINGS</b>						
<b>092 304</b>	<b>STUCCO:</b>						
092 304-0100	Stucco, 3 coats 25 mm thick, float finish, on masonry or concrete construction, no mesh included	SQM	0.125 Foreman 3.000 Plasterer 2.000 Common Laborer 0.500 Mixer 0.17 m3 2.000 Tools Set 1.000 Scaffolding set	32.300	37.000	34.650	0.991
092 304-0600	Stucco, 3 coats 25 mm thick, last coat with special coloring finish			31.400	36.000	33.700	1.019
<b>092 600</b>	<b>GYPSUM BOARD SYSTEMS</b>						

# **DIVISION 09: FINISHES**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG	AVRG. E. H.
<b>092 602</b>	<b>BLUEBOARD:</b>						
092 602-1100	Blueboard, 10 mm thick, on walls or ceilings, standard, with thin coat plaster finish	SQM	0.125 Labor Foreman 2.000 Finishing Carpenters 1.000 Common Laborer 1.000 Power Tool	85.000	88.000	76.500	0.094
092 602-1450	Blueboard, 10 mm thick, on beams, columns, or soffits, standard, with thin coat plaster finish			52.000	60.000	56.000	0.154
092 602-3100	Blueboard, 13 mm thick, on walls or ceilings, standard, with thin coat plaster finish			85.000	98.000	91.500	0.094
092 602-3400	Blueboard, 13 mm thick, on walls or ceilings, fire resistant, with thin coat plaster finish	SQM	0.125 Labor Foreman 2.000 Finishing Carpenters 1.000 Common Laborer 1.000 Power Tool	85.000	98.000	91.500	0.094
092 602-3800	Blueboard, 13 mm thick, on beams, columns, or soffits, fire resistant, with thin coat plaster finish			52.000	60.000	56.000	0.154
092 602-5100	Blueboard, 16 mm thick, on walls or ceilings, fire resistant, with thin coat plaster finish			72.000	83.000	77.500	0.111
092 602-5600	Blueboard, 16 mm thick, on beams, columns or soffits, fire resistant, with thin coat plaster finish			58.000	67.000	62.500	0.138
092 602-6000	Blueboard, for high ceilings, over 2.4 m high add			160.000	184.000	172.000	0.050
092 602-6500	Blueboard, for over 3 stories high, add/story			200.000	230.000	215.000	0.040
<b>092 604</b>	<b>CEILINGS:</b>						
092 604-0100	Ceilings, gypsum drywall, fire rated, finished, screwed to grid channel or joists, 13 mm or 16 mm thick	SQM	0.125 Labor Foreman 2.000 Finishing Carpenters 1.000 Common Laborer 1.000 Power Tool	78.000	90.000	84.000	0.103
092 604-0300	Ceilings, gypsum drywall, fire rated, finished, screwed to grid channel or joists, over 2.4 m high, 13 mm or 16 mm thick			72.000	83.000	77.500	0.111
092 604-0800	Ceilings, grid suspension system, direct hung, 3.8 mm or 90 mm cold rolled channel, with 22 mm hi hat furring channel, 610 mm O.C.			36.000	41.000	38.500	0.222
<b>092 608</b>	<b>DRYWALL:</b>						
092 608-0150	Drywall, gypsum plasterboard, nailed or screwed, 10 mm thick, on stud walls, standard taped and finished, paint not included	SQM	0.125 Labor Foreman 2.000 Finishing Carpenters 1.000 Common Laborer 1.000 Power Tool	85.000	98.000	91.500	0.094
092 608-0300	Drywall, gypsum plasterboard, nailed or screwed, 13 mm thick, on stud walls, standard, fire resistant or water resistant, taped and finished, paint not included			85.000	98.000	91.500	0.094
092 608-1000	Drywall, gypsum plasterboard, nailed or screwed, 13 mm thick, on ceilings, standard, fire resistant or water resistant, taped and finished, paint not included			78.000	90.000	84.000	0.103
092 608-1550	Drywall, gypsum plasterboard, nailed or screwed, 13 mm thick, on beams, columns, or soffits, standard, fire resistant or water resistant, taped and finished, paint not included			52.000	60.000	56.000	0.154
092 608-2000	Drywall, gypsum plasterboard, nailed or screwed, 16 mm thick, on stud walls, standard, fire resistant or water resistant, taped and finished, paint not included			78.800	91.000	84.900	0.102
092 608-3000	Drywall, gypsum plasterboard, nailed or screwed, 16 mm thick, on stud ceiling, standard, fire resistant or water resistant, taped and finished, paint not included			72.000	83.000	77.500	0.111
092 608-4000	Drywall fireproofing beam or columns, 2 layers, 13 mm thick, including finish, paint not included			24.750	28.000	26.375	0.323
092 608-4050	Drywall fireproofing beam or columns, 2 layers, 16 mm thick, including finish, paint not included			23.000	26.000	24.500	0.348
092 608-4150	Drywall fireproofing beam or columns, 3 layers, 16 mm thick, including finish, paint not included			15.250	18.000	16.625	0.525
092 608-5050	Drywall, for 25 mm thick coreboard on columns, paint not included			39.000	45.000	42.000	0.205
092 608-5100	Drywall, for foil-backed board, add			78.800	91.000	84.900	0.102
092 608-5200	Drywall, for high ceilings, over 2.4 m high add			300.000	345.000	322.500	0.027
092 608-5270	Drywall, textured spary, add			172.000	198.000	185.000	0.047
092 608-5300	Drywall, for over 3 stories high, add/story			550.000	633.000	591.500	0.015
092 608-5350	Drywall, for finishing corners, inside or outside, add			1125.000	1294.000	1209.500	0.007
092 608-5500	Drywall, for acoustical sealant, add/bead			506.000	582.000	544.000	0.016
092 608-5600	Drywall, sound deadening board, 6 mm gypsum or 13 mm wood fiber			160.000	184.000	172.000	0.050
<b>092 612</b>	<b>METAL STUDS, DRYWALL: Partitions, 3m high, with runners, See also studding, division 051-230</b>						
092 612-2000	Metal studs, drywall, non-load bearing, galvanized upto 20 ga., 40 mm, 400 mm O.C.	SQM	0.125 Labor Foreman 2.000 Finishing Carpenters 1.000 Common Laborer 1.000 Power Tool	95.500	110.000	102.750	0.084
092 612-2100	Metal studs, drywall, non-load bearing, galvanized upto 20 ga., 40 mm, 610 mm O.C.			113.100	131.000	122.050	0.071
092 612-2200	Metal studs, drywall, non-load bearing, galvanized upto 20 ga., 64 mm, wide, 400 mm O.C.			93.100	107.000	100.050	0.086
092 612-2400	Metal studs, drywall, non-load bearing, galvanized upto 20 ga., 100 mm, wide, 400 mm O.C.			89.200	103.000	96.100	0.090



# **DIVISION 09: FINISHES**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVR.	AVRG. E. H.
092 612-2450	Metal studs,drywall,non-load bearing,galvanized upto 20 ga., 100 mm, wide, 610 mm O.C.			105.300	121.000	113.150	0.076
092 612-2500	Metal studs,drywall,non-load bearing,galvanized upto 20 ga., 150 mm,wide, 400 mm O.C.			87.000	100.000	93.500	0.092
092 612-2550	Metal studs,drywall,non-load bearing,galvanized upto 20 ga., 150 mm wide, 610 mm O.C.			103.200	119.000	111.100	0.078
092 612-4000	Load bearing metal studs,structural,galvanized, 18 ga., 64 mm, 400 mm O.C.			69.800	80.000	74.900	0.115
092 612-4300	Load bearing metal studs,structural,galvanized,18 ga., 100 mm, wide, 400 mm O.C.			66.900	77.000	71.950	0.120
092 612-4450	Load bearing metal studs,structural,galvanized,18 ga., 150 mm,wide, 610 mm O.C.			77.400	89.000	83.200	0.103
092 612-4600	Load bearing metal studs,structural,galvanized, 16 ga., 64 mm, wide, 400 mm O.C.			58.200	67.000	62.600	0.137
092 612-4800	Load bearing metal studs,structural,galvanized,16 ga., 100 mm, wide, 400 mm O.C.			55.700	64.000	59.850	0.144
092 612-4850	Load bearing metal studs,structural,galvanized,16 ga., 100 mm, wide, 610 mm O.C.	SQM	0.125 Labor Foreman 2.000 Finishing Carpenters 1.000 Common Laborer 1.000 Power Tool	65.800	76.000	70.900	0.122
092 612-4900	Load bearing metal studs,structural,galvanized,16 ga., 150 mm, wide, 400 mm O.C.			54.400	63.000	58.700	0.147
<b>092 620</b>	<b>PARTITION WALL:</b>						
092 620-0500	Interior partition wall, 2.4 to 3.7 m high, including wood studs, 50 mm x 100 mm at 400 O.C., 13 mm standard,fire resistant or water resistant gypsum drywall both sides, taped & finished	SQM	0.125 Labor Foreman 2.000 Finishing Carpenters 1.000 Common Laborer 1.000 Power Tool	27.800	32.000	29.900	0.288
092 620-1600	Interior partition wall, 2.4 to 3.7 m high,including metal studs,NLB, 25 ga., at 400 O.C., 92 mm wide, 13 mm,standard,fire resistant or water resistant gypsum drywall both sides, taped & finished			29.100	33.000	31.050	0.275
092 620-2400	Interior partition wall, 2.4 to 3.7 m high,including metal studs, NLB, 25 ga.,at 400 O.C., 150 mm wide, 2 layers of 16 mm,fire resistant or water resistant gypsum drywall 2 hr.rating both sides, taped & finished			17.150	20.000	18.575	0.466
092 620-3400	Interior partition wall, 2.4 to 3.7m high,including wood studs 50 x 100 mm., at 400 O.C., 2 layers of 16 mm,fire resistant or water resistant gypsum drywall 2 hr.rating both sides, taped & finished			16.970	20.000	18.485	0.471
092 620-3600	Interior partition wall, 2.4 to 3.7 m high,including metal studs,NLB, 25 ga., at 400 O.C., 92 mm wide, 2 layers of 16mm,fire resistant or water resistant gypsum drywall 2 hr. rating, both sides, taped & finished			17.470	20.000	18.735	0.458
092 620-4000	Interior partition wall, 2.4 to 3.7 m high,including metal studs,NLB, 25 ga., at 400 O.C., 150 mm wide, 2 layers of 16mm,fire resistant or water resistant gypsum drywall 2 hr.rating both sides, taped & finished			17.320	20.000	18.660	0.462
092 620-4200	Interior partition wall, 2.4 to 3.7 m high,including NLB metal studs at 610 O.C., 92 mm wide, 16 mm standard,fire resistant or water resistant gypsum drywall both sides, taped & finished			31.200	36.000	33.600	0.256
092 620-5800	Interior partition wall, 2.4 to 3.7 m high,including metal studs,NLB, 25 ga., at 610 mm O.C., 92mm wide and 2 layers of 16 mm gypsum drywall,water & fire resistant,both sides,taped and finished			17.870	21.000	19.435	0.448
092 620-9500	Interior partition wall, 2.4 to 3.7 m high,including metal studs,LB, 25 ga., at 400 mm O.C., 150 mm wide and 3 layers of 16 mm gypsum drywall, 3 hrs fire resistant,both sides,taped and finished			11.800	14.000	12.900	0.678
<b>093</b>	<b>TILE</b>						
<b>093 100</b>	<b>CERAMIC TILE</b>						
<b>093 103</b>	<b>CERAMIC TILES :</b>						
093 102-0010	Ceramic tile base 300 mm x 100 mm high, mud set	LM	0.125 Foreman 1.000 Tile Layer 1.000 Tile Layer Helper 1.000 Tools Set	20.000	23.000	21.500	0.400
093 102-0100	Ceramic tile base 300 mm x 100 mm high, thin set			30.000	35.000	32.500	0.267
093 102-0900	Ceramic tile cove base 150 mm x 100 mm high, mud set			22.000	25.000	23.500	0.364
093 102-1500	Ceramic tile cove base 150 mm x 150 mm high, mud set			22.000	25.000	23.500	0.364
093 102-1900	Ceramic tile on bathtub, 1.5 m long,100 mm x 100 mm tile wainscott, adhesive set,1.8 m high	EA		3.300	4.000	3.650	2.424
093 102-2400	Ceramic bullnose trim, 100 mm x 100 mm, mud set	LM		20.000	23.000	21.500	0.400
093 102-5100	Ceramic sheet,floor,unglazed,with adhesive	SQM		12.000	14.000	13.000	0.667
093 102-5400	Ceramic tile interior wall,with dry thin set mortar 100 x 100 mm glazed			8.900	10.000	9.450	0.899
093 102-5700	Ceramic tile interior wall,with thin set 200 x 100 mm glazed			9.000	10.000	9.500	0.889
093 102-5800	Ceramic tile interior wall,with thin set 150 x 150 mm glazed			9.100	10.000	9.550	0.879
093 102-5810	Ceramic tile interior wall,with thin set 200 x 200 mm glazed			9.330	11.000	10.165	0.857
093 102-5830	Ceramic tile interior wall,with thin set 400 x 400 mm glazed			20.000	23.000	21.500	0.400
093 102-5840	Ceramic tile interior or exterior wall,set with portland cement mortar " conventional method" 100 x 100 mm glazed			7.330	8.000	7.665	1.091
093 102-5860	Ceramic tile interior or exterior wall,set with portland cement mortar 200 x 100 mm glazed			7.440	9.000	8.220	1.075
093 102-5870	Ceramic tile interior or exterior wall,set with portland cement mortar 150 x 150 mm glazed			7.500	9.000	8.250	1.067



# **DIVISION 09: FINISHES**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG	AVRG. E. H.
093 102-5880	Ceramic tile interior or exterior wall, set with portland cement mortar 200 x 200 mm glazed			7.700	9.000	8.350	1.039
093 102-5890	Ceramic tile interior or exterior wall, set with portland cement mortar 300 x 300 mm glazed			13.550	16.000	14.775	0.590
093 102-5900	Ceramic tile interior or exterior wall, set with portland cement mortar 400 x 400 mm glazed			16.500	19.000	17.750	0.485
093 102-7000	For epoxy grout, 2mm joints, 108 mm tile, add			150.000	173.000	161.500	0.053
<b>093 300</b>	<b>QUARRY TILE</b>						
<b>093 304</b>	<b>QUARRY TILE:</b>						
093 304-0010	Quarry tile, base, cove or sanitary 50 mm or 127 mm high, mortar set, 13 mm thick	SQM	0.125 Foreman 1.000 Tile Layer 1.000 Tile Layer Helper 1.000 Tools Set	20.000	23.000	21.500	0.400
093 304-0700	Quarry tile, floors, mortar set 100 x 100 x 13 mm thick			6.200	7.000	6.600	1.290
093 304-1000	Quarry tile, floors, mortar set 100 x 200 x 13 mm thick			7.700	9.000	8.350	1.039
<b>093 500</b>	<b>GLASS MOSAICS</b>						
<b>093 501</b>	<b>GLASS MOSAICS:</b>						
093 501-0300	Glass mosaics 20 mm tile on 300 mm sheets, standard grout	SQM	0.125 Foreman 1.000 Tile Layer 1.000 Tile Layer Helper 1.000 Tools Set	5.000	6.000	5.500	1.600
093 501-0700	Glass mosaics 20 mm tile on 300 mm sheets, standard grout color golds, silvers & specialties			4.000	5.000	4.500	2.000
<b>093 700</b>	<b>METAL TILE</b>						
<b>093 701</b>	<b>METAL TILE:</b>						
093 701-0010	Metal tile 1220 x 1220 mm sheet, 24 ga., tile pattern, nailed stainless steel or aluminized steel	SQM	0.125 Labor Foreman 2.000 Finishing Carpenters 1.000 Common Laborer 1.000 Power Tool	31.500	36.000	33.750	0.254
<b>093 900</b>	<b>TILE SETTING MATERIALS</b>						
<b>093 910</b>	<b>CEMENTITIOUS BACKBOARD:</b>						
093 910-0120	Cementitious backboard, on floor 0.9 m x 1.80 m x 16 mm sheets	SQM	0.125 Labor Foreman 2.000 Finishing Carpenters 1.000 Common Laborer 1.000 Power Tool	36.000	41.000	38.500	0.222
093 910-0150	Cementitious backboard, on wall 0.9 m x 1.2 m x 13 mm sheets			24.000	28.000	26.000	0.333
093 910-0320	Cementitious backboard, on counter 0.9 m x 1.80 m x 16 mm sheets			16.000	18.000	17.000	0.500
<b>094</b>	<b>TERRAZZO</b>						
<b>094 100</b>	<b>PORTLAND CEMENT TERRAZZO</b>						
<b>094 104</b>	<b>TERRAZZO, CAST IN PLACE (C.I.P.)</b>						
094 104-0010	Terrazzo, C.I.P. cove base, 150 mm high, 16 ga., zinc	LM	0.250 Foreman 2.000 Terrazzo Workers 3.000 Terrazzo Helper 0.250 Terrazzo Mixer 0.28 m3 1.000 Hoe carrier 0.500 Hand Metal Roller	30.000	34.000	32.000	0.467
094 104-0100	Terrazzo, C.I.P. curb, 150 mm high and 150 mm wide			6.000	7.000	6.500	2.333
094 104-0300	Terrazzo, divider strip for floors, 14 ga., 32 mm deep, zinc or brass		0.125 Labor Foreman 1.000 Tile Layer 1.000 Helper 1.000 Tools Set	120.000	136.000	129.000	0.067
094 104-0600	Terrazzo, divider strip for floors, heavy top strip 6mm thick, 32 mm deep, zinc or galvanized bottoms, brass			96.000	110.000	103.000	0.083
094 104-1500	Terrazzo, C.I.P., floor, bonded to concrete 40 mm thick, gray or white cement mortar set, 1.2 meter squares	SQM	0.250 Foreman 2.000 Terrazzo Workers 3.000 Terrazzo Helper 0.250 Terrazzo Grinder 0.250 Terrazzo Mixer 0.28 m3 1.000 Hoe carrier 0.250 Tools Set 0.500 Hand Metal Roller	17.900	21.000	19.450	1.006
094 104-1800	Terrazzo, C.I.P., floor, not - bonded to concrete 75 mm thick, gray or white cement mortar set, 1.2 meter squares			16.700	19.000	17.850	1.078
094 104-1810	Terrazzo, C.I.P., floor, not - bonded to concrete 75 mm thick, gray or white cement mortar set, 1.5 meter squares			17.200	20.000	18.600	1.041
094 104-1810	Terrazzo, C.I.P., floor, not - bonded to concrete 75 mm thick, gray or white cement mortar set, 0.90 meter squares			15.400	18.000	16.700	1.169
094 104-2200	For heavy duty abrasive terrazzo, add			8.950	10.000	9.475	2.611
094 104-2400	Terrazzo, floor, C.I.P., bonded conductive for hospitals			12.560	14.000	13.280	1.131
094 104-2500	Terrazzo, floor, C.I.P., floor, epoxy, 6 mm thick, average			8.070	9.000	8.535	1.117
094 104-3000	Terrazzo stairs, cast in place, pan filled treads	LM		15.000	17.000	16.000	1.200
094 104-4000	C.I.P. Terrazzo, wainscot, bonded, 38 mm thick	SQM		4.500	5.000	4.750	4.000



# **DIVISION 09: FINISHES**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVR	AVRG. E. H.
094 104-4200	C.I.P. Terrazzo,wainscot,epoxy 6 mm thick	"	↓	6.280	7.000	6.640	2.866
<b>094 200</b>	<b>PRECAST TERRAZZO</b>						
<b>094 201</b>	<b>TERRAZZO,PRECAST:</b>						
094 201-0010	Terrazzo,precast,base, 150 mm high,straight	LM	0.125 Labor Foreman 1.000 Tile Layer 1.000 Helper 1.000 Tools Set	20.000	23.000	21.500	0.400
094 201-0200	Terrazzo,precast,cove, 150 mm high			17.000	20.000	18.500	0.471
094 201-0400	Terrazzo,precast,cove, 200 mm high			17.000	20.000	18.500	0.471
094 201-1000	Terrazzo,curbs, 200 mm x 200 mm high	↓	↓	8.500	10.000	9.250	0.941
094 201-1200	Terrazzo,floor tiles,non-slip, 25 mm thick, 300 mmx 300 mm	SQM	0.125 Foreman 3.000 Tile Layer 2.000 Tile Layer Helper 0.125 Equip. Operator 0.125 Crane 11 Ton 2.000 Tools Set 1.000 Grinding Machine	16.300	19.000	17.650	1.534
094 201-1300	Terrazzo,floor tiles,non-slip 30 mm thick, 300 mm x 300 mm	↓	↓	16.300	19.000	17.650	1.534
094 201-1500	Terrazzo,floor tiles,non-slip 30 mm thick,400 mm x 400 mm	SQM	0.125 Foreman 3.000 Tile Layer 2.000 Tile Layer Helper 0.125 Equip. Operator 0.125 Crane 11 Ton 2.000 Tools Set 1.000 Grinding Machine	17.100	20.000	18.550	1.462
094 201-1600	Terrazzo,floor tiles,non-slip 40 mm thick,400 mm x 400 mm			17.100	20.000	18.550	1.462
<b>095</b>	<b>ACOUSTICAL TREATMENT &amp; WOOD FLOORING</b>						
<b>095 100</b>	<b>ACOUSTICAL CEILINGS</b>						
<b>095 102</b>	<b>CEILING TILE</b>						
095 102-0700	Ceiling acoustic tile, 20 mm thick, directly cemented with acoustical cement "adhesive", 300 mm x 300 mm, no Pattern.	SQM	0.125 Labor Foreman 2.000 Finishing Carpenter 1.000 Helper 1.000 Tools Set	50.000	58.000	54.000	0.160
095 102-0720	Ceiling acoustic tile, 20 mm thick, directly cemented with acoustical cement "adhesive", 300 mm x 600 mm, no Pattern.			66.000	76.000	71.000	0.121
095 102-0740	Ceiling acoustic tile, 20 mm thick, directly cemented with acoustical cement "adhesive", 300 mm x 300 mm, Pattern layout.			36.000	41.000	38.500	0.222
095 102-0740	Ceiling acoustic tile, 20 mm thick, directly cemented with acoustical cement "adhesive", 300 mm x 600 mm, Pattern layout.	↓	↓	45.000	52.000	48.500	0.178
<b>095 104</b>	<b>SUSPENDED ACOUSTIC CEILING BOARDS: Not including suspension system:</b>						
095 104-0400	Suspended Acoustic Ceiling Boards, fiberglass, film faced 610 mm x 610 mm or 610 mm x 1220 mm, 20 mm thick	SQM	0.125 Labor Foreman 1.000 Finishing Carpenter 1.000 Helper 1.000 Tools Set	52.000	60.000	56.000	0.154
095 104-0500	Suspended Acoustic Ceiling Boards, fiberglass, film faced 610 mm x 610mm or 610 mm x 1220 mm, 76 mm thick, thermal, 1.9 m2 K/W			36.000	41.000	38.500	0.222
095 104-0600	Suspended Acoustic Ceiling Boards, glass cloth faced fiberglass, 20 mm thick			44.000	51.000	47.500	0.182
095 104-0700	Suspended Acoustic Ceiling Boards, glass cloth faced fiberglass, 25 mm thick			43.000	50.000	46.500	0.186
095 104-0820	Suspended Acoustic Ceiling Boards, glass cloth faced fiberglass, 38 mm thick, nubby face			42.000	48.000	45.000	0.190
095 104-0900	Suspended Acoustic Ceiling Boards, mineral fiber boards, 16mm thick, aluminum faced 610 mm x 610 mm			52.000	60.000	56.000	0.154
095 104-1000	Suspended Acoustic Ceiling Boards, mineral fiber boards, 16 mm thick, plastic coated face 610 mm x 1220 mm			57.000	66.000	61.500	0.140
095 104-1200	Suspended Acoustic Ceiling Boards, mineral fiber, 2 hour rating, 16 mm thick			52.000	60.000	56.000	0.154
095 104-1300	Suspended Acoustic Ceiling Boards, mirror faced panels, 24 mm thick, 610 mm x 610 mm			39.000	45.000	42.000	0.205
095 104-2100	Suspended Acoustic Ceiling Boards, polystyrene eggcrate, 10 mm x 10 mm x 13 mm cubes			39.000	45.000	42.000	0.205
095 104-2400	Suspended Acoustic Ceiling Boards, luminous panels, prismatic, acrylic or polystyrene			35.000	40.000	37.500	0.229
095 104-3600	Suspended Acoustic Ceiling Boards, perforated aluminum sheets, 0.61 mm thick corrugated, painted or plain			38.000	44.000	41.000	0.211
095 104-3720	Suspended Acoustic Ceiling Boards, mineral fiber, 610 mm x 610 mm or 1220 mm, reveal edge painted 16 mm thick			52.000	60.000	56.000	0.154
095 104-3760	Suspended Acoustic Ceiling Boards, wood fiber in cement, 610mm x 610mm or 1220 mm, painted, 50mm thick			30.000	35.000	32.500	0.267
095 104-3780	Suspended Acoustic Ceiling Boards, wood fiber in cement, 610 mm x 610 mm or 1220 mm, painted, 76 mm thick	↓	↓	27.000	31.000	29.000	0.296
<b>095 106</b>	<b>SUSPENDED CEILING, COMPLETE: Including standard suspension system and 38mm carrier channels</b>						
095 106-0600	Suspended ceilings complete, fiberglass board, 610mm x 1220 mm x 16 mm, plain faced, supermarkets	SQM	0.125 Labor Foreman 1.000 Finishing Carpenter 1.000 Helper 1.000 Power Tools	27.000	31.000	29.000	0.296



# **DIVISION 09: FINISHES**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG	AVRG. E. H.
095 106-0700	Suspended ceilings complete, fiberglass board, 610 mm x 1220 mm x 20mm, plain faced, offices			22.000	25.000	23.500	0.364
095 106-0800	Suspended ceilings complete, mineral fiber, cement binder, T bar suspension 610 mm x 610 mm x 20mm board			20.000	23.000	21.500	0.400
095 106-0810	Suspended ceilings complete, mineral fiber, cement binder, T bar suspension 610 mm x 1220 mm x 16 mm board			23.000	26.000	24.500	0.348
095 106-0900	Suspended ceilings complete, luminous panels, prismatic, acrylic			21.000	24.000	22.500	0.381
095 106-1200	Suspended ceilings complete, metal pan with acoustic pad, steel, Aluminium or stainless steel			10.000	12.000	11.000	0.800
095 106-1800	Suspended ceilings complete, Z bar suspension, 16 mm or 20 mm mineral fiber tile			21.000	24.000	22.500	0.381
<b>095 250 ACOUSTICAL SPACE UNITS</b>							
<b>095 254 SOUND ABSORBING PANELS:</b>							
095 254-0200	Sound absorbing panels perforated steel facing, painted w / fiberglass, no backs, 57 mm thick, space units, ceiling or wall hung, white or colored	SQM	0.125 Labor Foreman 1.000 Finishing Carpenter 1.000 Helper 1.000 Power Tools	8.000	9.000	8.500	1.000
095 254-0300	Sound absorbing panels, fiberboard sound deadening panels, 13 mm thick			52.000	60.000	56.000	0.154
095 254-0500	Sound absorbing panels, fiberglass panels, 1220 mm x 2440 mm x 25mm thick, with glass cloth face for walls, cemented			19.000	22.000	20.500	0.421
095 254-0700	Sound absorbing panels, fiberglass panels, 1220 mm x 2440 mm x 38 mm thick, dacron covered, inner aluminum frame, wall mounted			22.000	25.000	23.500	0.364
095 254-0900	Sound absorbing panels, mineral fiberboard panels, fabric covered, 762 mm x 2743 mm, 20 mm thick, concealed spline, wall mounted			17.000	20.000	18.500	0.471
<b>095 300 ACOUSTICAL INSULATION</b>							
<b>095 304 BARRIERS:</b>							
095 304-0010	Barriers, plenum, leaded vinyl, 2.34 kg/m2	SQM	0.125 Labor Foreman 1.000 Finishing Carpenter 1.000 Helper 1.000 Power Tools	12.000	14.000	13.000	0.667
095 304-0300	Barriers, plenum, leaded vinyl, 7.32 kg/m2			10.500	12.000	11.250	0.762
095 304-0400	Barriers, plenum, leaded vinyl, 14.65 kg/m2			8.400	10.000	9.200	0.952
095 304-0600	Barriers, aluminum foil, fiberglass reinf., parallel with joists	SQM	0.125 Labor Foreman 1.000 Finishing Carpenter 1.000 Helper 1.000 Power Tools	20.000	23.000	21.500	0.400
095 304-0700	Barriers, aluminum foil, fiberglass reinf., perpendicular to joists			12.000	14.000	13.000	0.667
095 304-0900	Barriers, aluminum mesh, kraft, paperbacked			20.000	23.000	21.500	0.400
095 304-0980	Barriers, fiberglass batts, kraft faced, 150 mm thick			100.000	115.000	107.500	0.080
095 304-1000	Barriers, sheet lead, 0.45 kg., 0.397 mm thick, perpendicular to joists			10.500	12.000	11.250	0.762
<b>095 308 SOUND ATTENUATION:</b>							
095 308-0010	Sound attenuation, blanket, 25 mm thick	SQM	0.125 Labor Foreman 1.000 Finishing Carpenter 1.000 Helper 1.000 Power Tools	36.000	41.000	38.500	0.222
095 308-1500	Sound attenuation, blanket, 76 mm thick			35.000	40.000	37.500	0.229
095 308-3200	Sound attenuation, thermal or acoustical bat, above ceiling, 100 mm thick			33.000	38.000	35.500	0.242
095 308-3600	Sound attenuation, urethane plastic foam, open cell, on wall, 100 mm thick			40.000	46.000	43.000	0.200
095 308-3900	Sound attenuation, urethane plastic foam, open cell, on ceiling, 100 mm thick			33.000	40.000	36.500	0.242
095 308-4200	Sound attenuation, fiberglass reinforced backer board underlayment, on floor, 11 mm thick			30.000	35.000	32.500	0.267
<b>095 600 WOOD STRIP FLOORING</b>							
<b>095 604 WOOD:</b>							
095 604-0600	Wood floor, in mastic, over 2 ply flt, 20 mm or 26 mm thick maple	SQM	0.125 Labor Foreman 1.000 Finishing Carpenter 1.000 Helper 1.000 Power Tools	12.200	14.000	13.100	0.656
095 604-1600	Wood, maple flooring, over sleepers, 20 mm thick			10.200	12.000	11.100	0.784
095 604-1900	Wood, maple flooring, over sleepers, 26 mm thick			9.690	11.000	10.345	0.826
095 604-3700	Wood, portable hardwood, prefinished panels			9.690	11.000	10.345	0.826
095 604-3720	Wood, portable hardwood, prefinished panels, insulated with polystyrene, 25 mm thick			4.850	6.000	5.425	1.649
095 604-4000	Wood, maple, strip, 20 mm x 57 mm, not including finish			10.000	12.000	11.000	0.800
095 604-5200	Wood, parquetry, standard, 8 mm thick, not including finish, oak or teak average			10.200	12.000	11.100	0.784
095 604-5650	Wood, parquetry, standard, 20 mm thick, oak, average			10.200	12.000	11.100	0.784
095 604-5800	Wood, parquetry, custom, including finish, average			6.375	7.000	6.688	1.255
095 604-6500	Wood, prefinished, hardwood blocks, 230 mm x 230 mm, 20 mm thick			10.200	12.000	11.100	0.784



# **DIVISION 09: FINISHES**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG	AVRG. E. H.
095 604-7200	Wood, prefinished, acrylic wood parquet blocks, 300 mm x 300 mm x 8 mm, irradiated in epoxy			10.200	12.000	11.100	0.784
095 604-7400	Wood, yellow pine, 20 mm x 80 mm, tongue & groove, not including finish			13.260	15.000	14.130	0.603
095 604-7500	Refinish wood floor, sand, 2 coats poly wax soft wood, average			19.700	23.000	21.350	0.609
095 604-7600	Refinish wood floor, sand, 2 coats poly wax hard wood, average			8.800	10.000	9.400	1.364
095 604-7800	Wood, sanding and finishing, fill, polyurethane wax			13.800	16.000	14.900	0.870
095 604-7900	Wood, subfloor and underlayment, <i>See division 061164 &amp; 168</i>						
<b>095 650</b>	<b>WOOD BLOCK FLOORING</b>						
<b>095 651</b>	<b>WOOD BLOCK FLOORING:</b>						
095 651-0400	Wood block flooring, natural finish, 25 mm thru. 50 mm thick, fir or pine	SQM	0.125 Labor Foreman 1.000 Finishing Carpenter 1.000 Helper 1.000 Power Tools	15.000	17.000	16.000	0.533
<b>096</b>	<b>FLOORING &amp; CARPET</b>						
<b>096 150</b>	<b>MARBLE FLOORING</b>						
<b>096 151</b>	<b>MARBLE &amp; GRANITE:</b>						
096 151-0010	Marble, Thin gauge tile, 300 mm x 150 mm, 10 mm, mortar set	SQM	0.375 Foreman 2.000 Tile Layer 3.000 Tiler Layer Helper 0.625 Equip. Operator 0.625 Crane 11 Ton 0.500 Power Tools 0.125 Hodcarrier 0.500 Grinding Machine	10.950	13.000	11.975	1.279
096 151-0030	Marble tile 200 mm x 200 mm x 20 mm, mortar set			10.700	12.000	11.350	1.308
096 151-0050	Marble tile 300 mm x 300 mm x 20 mm, mortar set			15.300	18.000	16.650	0.915
096 151-0080	Marble tile 400 mm x 400 mm x 20 mm, mortar set	SQM	0.375 Foreman 2.000 Tile Layer 3.000 Tiler Layer Helper 0.625 Equip. Operator 0.625 Crane 11 Ton 0.500 Power Tools 0.125 Hodcarrier 0.500 Grinding Machine	16.400	19.000	17.700	0.854
096 151-0100	Marble tile 400 mm x 400 mm x 30 mm, mortar set			14.153	16.000	15.076	0.989
096 151-0120	Marble tile 400 mm x 400 mm x 30 mm, mortar set, Building above 5 floors, reduce production 3% each extra floor, avg production through building for 15 floors as example.			12.501	14.000	13.251	1.120
096 151-0140	Marble tile 400 mm x 400 mm x 30 mm, mortar set, Building above 5 floors, reduce production 3% each extra floor, avg production through building for 25 floors as example.	SQM	0.375 Foreman 2.000 Tile Layer 3.000 Tiler Layer Helper 0.625 Equip. Operator 0.625 Crane 11 Ton 0.500 Power Tools 0.125 Hodcarrier 0.500 Grinding Machine	10.756	12.000	11.378	1.302
096 151-0200	Marble, 300 mm x 300 mm x 10 mm, thin set, floors			17.000	20.000	18.500	0.824
096 151-1000	Granite floor, 300 mm x 300 mm x 20 mm thick			13.000	15.000	14.000	1.077
096 151-1100	Granite floor, 400 mm x 400 mm x 30 mm thick			12.000	14.000	13.000	1.167
096 151-2000	Marble stair tread 300 mm & riser 160 mm high, up to 1 meter long	LM		19.450	22.000	20.725	0.720
096 151-2100	Marble stair tread 300 mm & riser 160 mm high, from 1.2 meter up to 1.8 meter long.			25.869	30.000	27.934	0.541
096 151-2500	Granite stair tread 300 mm & riser 160 mm high, up to 1 meter long			17.000	20.000	18.500	0.824
096 151-2800	Granite stair tread 300 mm & riser 160 mm high, from 1.2 meter up to 1.8 meter long			22.000	25.000	23.500	0.636
<b>096 250</b>	<b>SLATE FLOORING</b>						
<b>096 251</b>	<b>SLATE TILE:</b>						
096 251-0010	سلاطة Slate tile, 150 mm x 150 mm x 6 mm thick, thin set	SQM	0.125 Foreman 1.000 Tile Layer 1.000 Tiler Layer Helper 0.125 Equip. Operator 0.125 Crane 11 Ton 1.000 Power Tools 0.125 Hodcarrier	15.000	17.000	16.000	0.667
<b>096 254</b>	<b>CONCRETE FLOORS</b> And toppings, see division 033-454						
<b>096 350</b>	<b>BRICK FLOORING</b>						
<b>096 354</b>	<b>FLOORING:</b>						
096 354-0010	Flooring, acidproof shales, red, 200 mm x 95 mm x 32 mm thick, sand bed.	SQM	0.125 Foreman 1.000 Tile Layer 1.000 Tiler Layer Helper 1.000 Hodcarrier 1.000 Power Tools	9.000	10.000	9.500	1.778

# **DIVISION 09: FINISHES**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG	AVRG. E. H.
096 354-0050	Flooring, acidproof shales, red, 200 mm x 95 mm x 57 mm thick, sand bed			8.325	10.000	9.163	1.922
096 354-0200	Flooring, acidproof clay brick, 300 mm x 300 mm x 40 mm thick, mortar bed			10.350	12.000	11.175	1.546
096 354-0260	Flooring, ceramic, 100 mm x 200 mm x 13 mm thick, unglazed, mortar bed			9.300	11.000	10.150	1.720
096 354-0280	Flooring, ceramic, hexagonal tile 200 mm, 20 mm thick, mortar bed			8.370	10.000	9.185	1.912
096 354-0500	Flooring, pavers, 200 mm x 100 mm, 25 mm to 44 mm thick red, mortar bed			8.280	10.000	9.140	1.932
096 354-0540	Flooring, pavers, 200 mm x 100 mm, to 44 mm thick red, mortar bed with epoxy joints			7.000	8.000	7.500	2.286
096 354-0580	Flooring, pavers, 200 mm x 100 mm, 57 mm thick red, mortar bed			7.750	9.000	8.375	2.065
096 354-0870	Flooring for epoxy joints add			48.000	55.000	51.500	0.333
096 354-0890	Flooring for waxed surface, steam cleaned			80.000	92.000	86.000	0.200
<b>096 600</b>	<b>RESILIENT TILE FLOORING</b>						
<b>096 610</b>	<b>RESILIENT:</b>						
096 610-0050	Resilient, asphalt tile, on concrete, 3 mm thick, colored	SQM	0.125 Foreman 1.000 Tile Layer 1.000 Helper 1.000 Tools Set	42.800	49.000	45.900	0.187
096 610-0800	Resilient base, cove, rubber or vinyl, to 3 mm thick, standard colors, upto 150 mm high	LM		110.000	127.000	118.500	0.073
096 610-1700	Resilient conductive flooring, rubber tile, or homogeneous vinyl tile, 3 mm thick	SQM		39.000	45.000	42.000	0.205
096 610-2200	Resilient, Unbevelled Cork tile, standard finish, or urethane finish, 3 mm thick to 13 mm thick			21.400	25.000	23.200	0.374
096 610-2205	Resilient, bevelled Cork tile, standard finish, or urethane finish, 3 mm thick to 13 mm thick			26.700	31.000	28.850	0.300
096 610-3700	Resilient, polyethylene, in rolls, no base, including nylon action surface, up to 10 mm thick.			32.000	37.000	34.500	0.250
096 610-5500	Resilient polyvinyl chloride sheet, for gymnasium, 6 mm thick			16.000	18.000	17.000	0.500
096 610-5600	Resilient polyvinyl chloride sheet, for gymnasium, 10 mm thick			14.000	16.000	15.000	0.571
096 610-5900	Resilient rubber sheet, 914 mm wide, 3 mm thick	SQM	0.125 Foreman 1.000 Tile Layer 1.000 Helper 1.000 Tools Set	32.000	37.000	34.500	0.250
096 610-6000	Resilient rubber sheet, 914 mm wide, 6 mm thick			26.000	30.000	28.000	0.308
096 610-6050	Resilient rubber tile, marbled colors, 300 mm x 300 mm, 5 mm thick			28.000	32.000	30.000	0.286
096 610-6700	Resilient, synthetic turf, 10 mm thick			16.000	18.000	17.000	0.500
096 610-6750	Resilient, synthetic turf, interlocking, 610 mm x 610 mm squares, 13 mm thick, not cemented, for playgrounds, average			16.000	18.000	17.000	0.500
096 610-7000	Resilient, vinyl composition tile, 300 mm x 300 mm, 2 mm thick or 3 mm thick, embossed or marbled or solid			34.000	39.000	36.500	0.235
096 610-8000	Resilient, vinyl sheet goods, backed, to 6 mm thick, average			32.000	37.000	34.500	0.250
<b>096 780</b>	<b>RESILIENT ACCESSORIES</b>						
<b>096 781</b>	<b>STAIR TREADS AND RISERS:</b>						
096 781-0300	Stair treads, rubber, molded tread, 300 mm wide, 8 mm thick	LM	0.125 Foreman 1.000 Tile Layer 1.000 Helper 1.000 Tools Set	42.500	49.000	45.750	0.188
096 781-0900	Stair treads, rubber, grip strip safety tread, colors, 8 mm thick	LM		42.500	49.000	45.750	0.188
096 781-1200	Stair landing, rubber, grip strip safety tread, colors, 8 mm thick	SQM		32.000	37.000	34.500	0.250
096 781-2100	Stair treads, vinyl, molded, 300 mm wide, colors, 6 mm thick	LM		42.500	49.000	45.750	0.188
096 781-2400	Stair risers, vinyl, 178 mm high, 3 mm thick, coved			63.000	72.000	67.500	0.127
096 781-2500	Stair treads and risers combined, vinyl, 3 mm thick			32.000	37.000	34.500	0.250
<b>096 850</b>	<b>SHEET CARPET</b>						
<b>096 852</b>	<b>CARPET:</b>						
096 852-1100	Carpet, commercial grade, direct cement, Nylon, level loop, upto 1134 gram, avg size room	SQM	0.125 Foreman 1.000 Tile Layer 1.000 Helper	80.000	92.000	86.000	0.100
096 852-3340	Carpet, commercial grade, direct cement, Nylon, plush, upto 1700 gram, avg size room			68.000	78.000	73.000	0.118
096 852-3500	Carpet, commercial grade, direct cement, Olefin, upto 1190 gram, avg size room			68.000	78.000	73.000	0.118
096 852-4500	Carpet, commercial grade, direct cement, Wool, level loop, upto 1418 gram, avg size room			80.000	92.000	86.000	0.100
096 852-4900	Carpet, commercial grade, direct cement, Wool, patterned, upto 1360 gram, avg size room			64.000	74.000	69.000	0.125
096 852-5000	Carpet, commercial grade, direct cement, Nylon, plush, upto 1700 gram, Small rooms wide less than 3.6 meters			54.000	62.000	58.000	0.148



## DIVISION 09: FINISHES

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVR	AVRG. E. H.
096 852-5200	Carpet,commercial grade,direct cement, Wool,patterned, upto 1360 gram, Large open area, no cuts			110.000	127.000	118.500	0.073
096 852-5800	For bound carpet baseboard	LM		160.000	184.000	172.000	0.050
096 852-5610	Carpet for stairs, average 1.2 meter long trad	RISER		32.000	37.000	34.500	0.250
096 852-9000	Carpet,sponge rubber pad, or sponge felt pad, or urethane pad, average	SQM		180.000	207.000	193.500	0.044
<b>096 856</b>	<b>CARPET MAINTENANCE:</b>						
096 856-0010	Carpet maintenance,steam clean,per cleaning average	SQM	1 Common Laborer 1 Power tool	160.000	184.000	172.000	0.050
<b>096 900</b>	<b>CARPET TILE:</b>						
096 900-5060	Carpet tile, 457 mm x 457 mm or 610 mm x 610 mm upto 1190 gram	SQM	0.125 Foreman 1.000 Tile Layer 1.000 Helper 1.000 Tools Set	59.000	68.000	63.500	0.000
<b>097</b>	<b>SPECIAL FLOORING &amp; FLOOR TREATMENT</b>						
<b>097 200</b>	<b>EPOXY-MARBLE FLOORING</b>						
<b>097 201</b>	<b>COMPOSITION FLOORING:</b>						
097 201-0010	Composition flooring,acrylic, 6 mm thick	SQM	0.125 Foreman 1.000 Cement Finisher 4.000 Common Laborer 1.000 Grinder 0.500 Mixer 1.000 Gas Vibrator 0.500 Hodcarrier 0.500 Hand Metal Roller	32.000	37.000	34.500	0.750
097 201-0100	Composition flooring,acrylic, 10 mm thick			28.000	32.000	30.000	0.857
097 201-0600	Composition flooring,epoxy,with colored quartz chips,boardcast,average			30.000	35.000	32.500	0.800
097 201-0900	Composition flooring,epoxy,trowelled,average			22.500	26.000	24.250	1.067
097 201-1200	Composition flooring,heavy duty epoxy topping, 6 mm thick			18.000	21.000	19.500	1.333
097 201-1800	Composition flooring,epoxy terrazzo, 6 mm thick,chemical resistant,average		0.250 Foreman 2.000 Terrazzo Workers 3.000 Terrazzo Helper 0.250 Terrazzo Grinder 0.250 Terrazzo Mixer 0.28 m3 1.000 Hodcarrier 0.250 Tools Set 0.500 Hand Metal Roller	15.000	17.000	16.000	1.200
<b>098</b>	<b>SPECIAL COATINGS</b>						
<b>098 150</b>	<b>GLAZED COATINGS</b>						
<b>098 150</b>	<b>GLAZED COATINGS:</b>						
098 150-0010	Wall coatings,acrylic glazed coatings,average	SQM	1 Painter,ordinary 1 Set Consumable Tools	35.000	40.000	37.500	0.229
098 150-0300	Wall coatings,epoxy coatings,average			30.000	35.000	32.500	0.287
098 150-0600	Wall coatings,exposed aggregate,troweled on, 2 mm to 6 mm,average			18.000	21.000	19.500	0.444
098 150-3600	Wall coatings,ceramic-like glazed coating,cementitious,average			35.000	40.000	37.500	0.229
<b>099</b>	<b>PAINTING &amp; WALL COVERINGS</b>						
<b>099 100</b>	<b>EXTERIOR PAINTING</b>						
<b>099 104</b>	<b>DOORS AND WINDOWS:</b>						
099 104-0130	Door frames & trim,only,brushwork,primer	LM	1 Painter,ordinary 1 Set Consumable Tools	200.000	230.000	215.000	0.040
099 104-0120	Door frames & trim,only,brushwork, finish coat exterior latex			180.000	207.000	193.500	0.044
099 104-0130	Door frames & trim,only,brushwork primer & 1 coat,exterior latex			95.000	109.000	102.000	0.084
099 104-0140	Door frames & trim,only,brushwork,primer & 2 coat,exterior latex			60.000	69.000	64.500	0.133
099 104-0150	Doors,flush,both sides,0.9 x 2.1 m, including frame,brushwork primer, Paint area 7.2 meter both sides	EA		17.000	20.000	18.500	0.471
099 104-0160	Doors,flush,both sides, brushwork primer paint	SQM		120.000	138.000	129.000	0.067
099 104-0190	Doors,flush,both sides,brushwork,primer, & 2 coats exterior latex			37.000	43.000	40.000	0.216
099 104-0200	Doors,flush,both sides,0.9 x 2.1 m, including frame & trim,brushwork Stain sealer & 2 coats polyurethane, Paint area 7.2 meter both sides	EA		3.000	4.000	3.500	2.667
099 104-0205	Doors,flush,both sides,including frame & trim,brushwork,stain,sealer & 2 coats polyurethane	SQM		20.000	23.000	21.500	0.400
099 104-0270	Doors,louvered,both sides,including frame & trim,brushwork,primer			54.000	62.000	58.000	0.148
099 104-0290	Doors,louvered,both sides,including frame & trim,brushwork primer & finish coat,exterior latex			20.000	23.000	21.500	0.400
099 104-0310	Doors,louvered,both sides,including frame & trim,brushwork,primer & 2 coats, exterior latex			15.000	17.000	16.000	0.533
099 104-0320	Doors,louvered,both sides,including frame & trim,brushwork,stain,sealer & 2 coats polyurethane			10.000	12.000	11.000	0.800



# **DIVISION 09: FINISHES**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
099 104-0330	Doors,panel,both sides,including frame & trim,roll & bursh,primer			84.000	97.000	90.500	0.095
099 104-0370	Doors,panel,both sides,including frame & trim,roll,primer & 2 coats,exterior latex			22.000	25.000	23.500	0.364
099 104-0380	Doors,panel,both sides,including frame & trim,brushwork,stain,sealer,2 coats polyurethane			14.250	16.000	15.125	0.561
099 104-0420	Window,wood upto 1.4 m2 surface,brushwork primer			96.000	110.000	103.000	0.083
099 104-0450	Window,wood upto 1.4 m2 surface, brushwork, primer & 2 coats			30.000	35.000	32.500	0.267
099 104-0445	Window,wood upto 1.4 m2 surface,brushwork stain sealer & 1 coat varnish			16.250	19.000	17.625	0.492
<b>099 106</b>	<b>SIDING</b>						
099 106-0500	Exterior siding painting,alkyd,oil base, 2 coats,spray	SQM	1 Painter,ordinary 1 Paint sprayer	160.000	184.000	172.000	0.059
099 106-1200	Stucco,rough,oil base,paint 2 coats,brushwork			44.000	51.000	47.500	0.182
099 106-1400	Stucco,rough,oil base,paint 2 coats,roller			70.000	81.000	75.500	0.114
099 106-1600	Stucco,rough,oil base,paint 2 coats,spray			140.000	161.000	150.500	0.057
099 106-1800	siding,clapboard,oil base, primer coat.& 2 coats texture,brushwork			120.000	138.000	129.000	0.067
099 106-4400	Siding wood shingles,oil base,primer coat, & 2 coats texture,spar			70.000	81.000	75.500	0.114
099 106-5000	Siding wood shingles, roll, 2 coats stain.			39.000	45.000	42.000	0.205
099 106-6000	Siding wood shingles, brushwork 2 coats stain			38.000	44.000	41.000	0.211
099 106-8000	Siding wood shingles, oil base, 3 coats, 1 coat primer, brushwork, 2 coats, spray			50.000	58.000	54.000	0.160
<b>099 108</b>	<b>FENCES:</b>						
099 108-0110	Fences paint chain link or wire metal, water base, 1 coat roller & 1 coat brushwork	SQM	1 Painter,ordinary 1 Set Consumable Tools	52.000	60.000	56.000	0.154
099 108-0130	Fences paint chain link or wire metal,spray,water base, & 2 coats.		1 Painter,ordinary 1 Paint sprayer	150.000	173.000	161.500	0.053
099 108-0200	Fences paint stockade,water base roll & brush,first coat		1 Painter,ordinary 1 Set Consumable Tools	95.000	110.000	102.500	0.084
099 108-0220	Fences paint stockade,water base roll & brush,second coat			125.000	144.000	134.500	0.064
099 108-0230	Fences paint stockade,water base spray,first coat		1 Painter,ordinary 1 Paint sprayer	275.000	316.000	295.500	0.029
099 108-0240	Fences paint stockade,water base spray,second coat			335.000	385.000	360.000	0.024
<b>099 112</b>	<b>MISCELLANEOUS: For painting metals see Div. 051255</b>						
099 112-0100	Railing,exterior,decorative wood,including balusters brushwork stain, seal, sand & varnish First coat.	LM	1 Painter,ordinary 1 Set Consumable Tools	52.000	60.000	56.000	0.154
099 112-0120	Railing paint,brushwork,stain,sand,seal & varnish Second coat.			68.000	78.000	73.000	0.118
099 112-0450	Decking paint,sealer or paint,alkyd,brushwork	SQM		28.000	32.000	30.000	0.286
099 112-0460	Decking paint,sealer or paint,alkyd,brushwork,first coat			30.000	35.000	32.500	0.267
099 112-0470	Decking paint,sealer,or paint,alkyd,brushwork,second coat	SQM	1 Painter,ordinary 1 Set Consumable Tools	32.000	37.000	34.500	0.250
<b>099 120</b>	<b>TRIM:</b>						
099 120-0120	Paint fascia, 25 mm thick, 100 mm high,latex paint one coat,brushwork, & roll 2 coats	LM	1 Painter,ordinary 1 Set Consumable Tools	62.000	71.000	66.500	0.129
099 120-0140	Paint fascia, 25 mm thick, 100 mm high,latex paint one coat,brushwork, & spray 2 coats		1 Painter,ordinary 1 Paint sprayer	89.000	102.000	95.500	0.090
099 120-0200	Paint fascia, 25 mm thick, 300 mm high,latex paint one coat,brush work, & spray 2 coats			80.000	92.000	86.000	0.100
099 120-0220	Gutters & downspouts paint,metal zinc chromate paint,brushwork,gutters, 127 mm, 3 coats		1 Painter,ordinary 1 Set Consumable Tools	60.000	69.000	64.500	0.133
<b>099 124</b>	<b>WALLS,MASONRY (CMU):</b>						
099 124-0410	Walls,masonry paint,roll,latex,paint, first coat	SQM	1 Painter,ordinary 1 Set Consumable Tools	200.000	230.000	215.000	0.040
099 124-0420	Walls,masonry paint,roll,latex,paint, second coat	SQM	1 Painter,ordinary 1 Set Consumable Tools	230.000	265.000	247.500	0.035
099 124-0430	Walls,masonry paint,roll,waterproof sealer, first coat			112.000	129.000	120.500	0.071
099 124-0440	Walls,masonry paint,roll,waterproof sealer, 2nd coat			176.000	202.000	189.000	0.045
099 124-0450	Walls,masonry paint,spray,latex,paint,first coat		1 Painter,ordinary 1 Paint sprayer	400.000	460.000	430.000	0.020
099 124-0460	Walls,masonry paint,spray,latex,paint, 2nd coat			450.000	518.000	484.000	0.018
099 124-0470	Walls,masonry paint,spray,waterproof,sealer,first coat			400.000	460.000	430.000	0.020
099 124-0480	Walls,masonry paint,spray,waterproof,sealer,second coat			450.000	518.000	484.000	0.018
<b>099 200</b>	<b>INTERIOR PAINTING</b>						
<b>099 204</b>	<b>CABINETS AND CASEWORK:</b>						
099 204-1000	Cabinets and casework,primer coat,oil base,brushwork	SQM	1 Painter,ordinary 1 Set Consumable Tools	48.000	57.000	52.500	0.167
099 204-2000	Cabinets and casework,paint,latex paint,brushwork, 1 coat			42.000	48.000	45.000	0.190
099 204-3000	Cabinets and casework,paint,stain,brushwork,wipe off			46.000	41.000	38.500	0.222



**DIVISION 09: FINISHES**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVR.G	AVRG. E. H.
099 204-4500	Cabinets and casework, varnish, 3 coats, brushwork, sand after 1st coat	↓	↓	18.000	21.000	19.500	0.444
<b>099 214</b>	<b>DOORS &amp; WINDOWS, LATEX:</b> See Div. 099104 exterior doors.						
<b>099 216</b>	<b>DOORS &amp; WINDOWS, ALKYD (OIL BASE):</b> Labor cost includes protection of adjacent items not painted						
099 216-0500	Flush door & frame paint, oil, primer brushwork	SQM	1 Painter, ordinary 1 Set Consumable Tools	120.000	138.000	129.000	0.067
099 216-1000	Flush door & frame paint, oil, primer brushwork, & 1 coat paint			53.000	61.000	57.000	0.151
099 216-1400	Flush door & frame, stain, brushwork, wipe off			110.000	127.000	118.500	0.073
099 216-1800	Flush door & frame paint, varnish, 3 coats brushwork, sand after 1st coat			20.000	23.000	21.500	0.400
099 216-2000	Panel door & frame paint, oil, primer brushwork			84.000	97.000	90.500	0.095
099 216-2200	Panel door & frame paint, oil, primer brushwork, & 1 coat paint			46.000	53.000	49.500	0.174
099 216-2600	Panel door & frame paint, stain, brushwork, wipe off			102.000	117.000	109.500	0.078
099 216-3000	Panel door & frame paint, varnish, 3 coats brushwork, sand after 1st coat			18.000	21.000	19.500	0.444
099 216-4400	Paint windows including frame & trim, per side, oil primer, brushwork			110.000	127.000	118.500	0.073
099 216-5800	Paint windows including frame & trim, per side, oil primer & 1 coat brushwork	↓	↓	53.000	61.000	57.000	0.151
<b>099 224</b>	<b>WALLS AND CEILINGS:</b> Labor cost includes protection of adjacent items not painted						
099 224-0100	Paint concrete, dry wall or plaster, oil base, primer or sealer coat smooth finish, brushwork	SQM	1 Painter, ordinary 1 Set Consumable Tools	115.000	132.000	123.500	0.070
099 224-0240	Paint concrete, dry wall or plaster, oil base, primer or sealer coat smooth finish, roller			140.000	161.000	150.500	0.057
099 224-0800	Paint concrete, dry wall or plaster, paint 2 coats, smooth finish, brushwork			60.000	69.000	64.500	0.133
099 224-0840	Paint concrete, dry wall or plaster, paint 2 coats, smooth finish, roller		↓	75.000	86.000	80.500	0.107
099 224-0880	Paint concrete, dry wall or plaster, paint 2 coats, smooth finish, spray		1 Painter, ordinary 1 Paint sprayer	140.000	161.000	150.500	0.057
099 224-0900	Paint concrete, dry wall or plaster, paint 2 coats, sand finish, brushwork		1 Painter, ordinary 1 Set Consumable Tools	50.000	58.000	54.000	0.160
099 224-0940	Paint concrete, dry wall or plaster, paint 2 coats, sand finish, roller		..	64.000	74.000	69.000	0.125
099 224-0980	Concrete, dry wall or plaster, paint 2 coats, sand finish, spray		1 Painter, ordinary 1 Paint sprayer	118.000	136.000	127.000	0.068
099 224-1200	Concrete, dry wall or plaster, paint 3 coats, smooth finish, brushwork		1 Painter, ordinary 1 Set Consumable Tools	40.000	46.000	43.000	0.200
099 224-1240	Concrete, dry wall or plaster, paint 3 coats, smooth finish, roller		..	50.000	58.000	54.000	0.160
099 224-1280	Concrete, dry wall or plaster, paint 3 coats, smooth finish, spray	↓	1 Painter, ordinary 1 Paint sprayer	94.000	108.000	101.000	0.085
<b>099 700</b>	<b>WALLPAPER</b>						
<b>099 701</b>	<b>WALL COVERING</b>						
099 701-0050	Wall covering, aluminum foil	SQM	1 Paper hanger 1 Set Tools	30.000	35.000	32.500	0.267
099 701-0100	Wall covering, copper sheets, 0.6 mm thick, vinyl backing			27.000	31.000	29.000	0.296
099 701-0600	Wall covering, cork tiles, light or dark, 300 mm x 300 mm x 5 mm			27.000	31.000	29.000	0.296
099 701-0700	Wall covering, cork tiles, light or dark, 300 mm x 300 mm x 6 mm	↓	↓	26.000	30.000	28.000	0.308
099 701-0900	Wall covering, cork tiles, light or dark, 300 mm x 300 mm x 6 mm, basketweave	SQM	1 Paper hanger 1 Set Tools	27.000	31.000	29.000	0.296
099 701-1000	Wall covering, cork tiles, light or dark, 300 mm x 300 mm x 13 mm, natural, non-directional pattern			27.000	31.000	29.000	0.296
099 701-1200	Wall covering, cork tiles, granular surface, 300 mm x 910 mm x 13 mm thick			42.000	48.000	45.000	0.190
099 701-1300	Wall covering, cork tiles, granular surface, 300 mm x 910 mm x 25 mm thick			40.000	46.000	43.000	0.200
099 701-1500	Wall covering, cork tiles, polyurethane coated, 300 mm x 300 mm x 5 mm thick			27.000	31.000	29.000	0.296
099 701-1600	Wall covering, cork tiles, polyurethane coated, 300 mm x 300 mm x 8 mm thick			26.000	30.000	28.000	0.308
099 701-1800	Wall covering, cork wallpaper, paperbacked, natural or coloured			42.000	48.000	45.000	0.190
099 701-2100	Wall covering, flexible wood veneer, 0.8 mm thick, plain woods			10.000	12.000	11.000	0.800
099 701-2200	Wall covering, flexible wood veneer, 0.8 mm thick, exotic woods			9.000	10.000	9.500	0.889
099 701-2400	Wall covering, gypsum based, fabric-backed, fire resistant for masonry walls, average			55.000	63.000	59.000	0.145
099 701-2750	Wall covering, acrylic, modified, semi-rigid PVC, 0.71 mm thick			35.000	40.000	37.500	0.229
099 701-2800	Wall covering, acrylic, modified, semi-rigid PVC, 1 mm thick			33.000	38.000	35.500	0.242
099 701-3000	Wall covering, vinyl, fabric-backed, lightweight			55.000	63.000	59.000	0.145
099 701-3300	Wall covering, vinyl, fabric-backed, medium weight			42.000	48.000	45.000	0.190
099 701-3400	Wall covering, vinyl, fabric-backed, heavy weight			38.000	44.000	41.000	0.211
099 701-3700	Wall covering, wallpaper, average workmanship, solid pattern, low cost paper			55.000	63.000	59.000	0.145

# **DIVISION 09: FINISHES**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG	AVRG. E. H.
099 701-3900	Wall covering, wallpaper, average workmanship, basic patterns (matching required), Quality workmanship			45.000	52.000	48.500	0.178
099 701-4100	Wall covering, linen wall covering, paper backed			27.000	31.000	29.000	0.296
099 701-4100	Wall covering, grass cloths with lining paper			27.000	31.000	29.000	0.296
<b>099 900</b>	<b>SURFACE PREPARATION</b>						
<b>099 902</b>	<b>REMOVAL: Existing lead paint, by chemicals</b>						
099 902-0030	Removal existing paint from, plain metal surfaces	SQM	1 Painter, ordinary 1 Set Tools	9.600	11.000	10.300	0.833
099 902-0040	Removal existing paint from, plain wood surfaces			8.400	10.000	9.200	0.952
099 902-0070	Removal existing paint from, baseboard, to 300 mm wide			9.600	11.000	10.300	0.833
099 902-0200	Removal existing paint from balustrades, one side			2.940	3.000	2.970	2.721
099 902-1400	Removal existing paint from cabinets average.			3.360	4.000	3.680	2.381
099 902-2800	Removal existing paint from doors, one side			7.560	9.000	8.280	1.058
099 902-2840	Removal existing paint from doors, paneled, one side			4.300	5.000	4.650	1.860
099 902-3200	Removal existing paint from grilles, one side, average			2.850	3.000	2.925	2.807
099 902-4400	Removal existing paint from pipes, to 100 mm diameter (4")	LM		30.500	35.000	32.750	0.262
099 902-4440	Removal existing paint from pipes, to 300 mm diameter (12")			10.100	12.000	11.050	0.792



A decorative geometric pattern, likely a traditional Islamic or Arabesque design, is located in the top right corner of the page. It features a complex, repeating lattice of lines forming various polygons and star shapes, with some areas filled with a darker, textured pattern. The pattern is set against a light background and is partially cut off by the right edge of the page.

# Division 10

## Specialties

## **Division 10.. Specialties..**

### **Estimating Tips:**

#### **General**

Many items in Division 10 require some type of support system that is not usually furnished with the item. Examples of these systems include blocking for the attachment of grab bars and support angles for ceiling hung toilet partitions. The required blocking or supports material must be added to the estimate in the appropriate division.

Some items in Division 10, such as lockers, may require assembly before installation.

Usually items of this division prefabricated and installed by special contractors under the general contractor supervision and coordination. Some items may be covered under provisional sum.

#### **106 Partitions & Storage Shelving:**

The required acoustical rating of a folding partition can have a significant impact on costs.

Verify the sound transmission co-efficient rating of the panel priced to the specification requirements.



# **DIVISION 10 : SPECIALTIES**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E.H.
<b>101</b>	<b>CHALKBOARDS, COMPARTMENTS &amp; CUBICLES</b>						
<b>101 100</b>	<b>CHALKBOARDS</b>						
<b>101 104</b>	<b>CHALKBOARDS</b>						
101 104-0500	Sliding chalkboards, Vertical, one sliding board with back panel, wall mounted 2.4 m x 1.2 m	EA	0.125 Labor Foreman 2.000 Carpenters 1.000 Laborer 1.000 Power Tool	8.000	9.000	8.500	1.000
101 104-0540	Sliding chalkboards, Vertical, one sliding board with back panel, wall mounted 2.4 m x 3.6 m			6.000	7.000	6.500	1.333
101 104-0620	Sliding chalkboards, Vertical, two sliding boards with back panel 2.4 m x 1.2 m			8.000	9.000	8.500	1.000
101 104-0660	Sliding chalkboards, Vertical, two sliding board with back panel 2.4 m x 3.6 m			6.000	7.000	6.500	1.333
101 104-0800	Sliding chalkboards Horizontal, two track, 1.2 m x 2.4 m, 2 sliding panels			8.000	9.000	8.500	1.000
101 104-0820	Sliding chalkboards Horizontal, two track, 1.2 m x 3.6 m, 2 sliding panels			7.000	8.000	7.500	1.143
101 104-0840	Sliding chalkboards Horizontal, two track, 1.2 m x 4.8 m, 4 sliding panels			6.000	7.000	6.500	1.333
101 104-0920	Sliding chalkboards Horizontal, four track, 1.2 m x 2.4 m, 4 sliding panels			8.000	9.000	8.500	1.000
101 104-0960	Sliding chalkboards Horizontal, four track, 1.2 m x 4.8 m, 4 sliding panels			6.000	7.000	6.500	1.333
101 104-1450	Sliding chalkboard Vertical, motor operated, one sliding panels with back panel; 3 m x 1.2 m		0.125 Labor Foreman 2.000 Carpenters 0.500 Electrician 1.000 Laborer 1.000 Power Tool	5.000	6.000	5.500	1.600
101 104-1550	Sliding chalkboard Vertical, motor operated, one sliding panels with back panel; 3 m x 4.8 m			4.000	5.000	4.500	2.000
101 104-1750	Chalkboard Vertical, motor operated, two sliding panels with back panel; 3 m x 1.2 m			5.000	6.000	5.500	1.600
101 104-1850	Chalkboard Vertical, motor operated, two sliding panels with back panel; 3 m x 4.8 m			4.000	5.000	4.500	2.000
101 104-2100	Chalkboard Vertical, motor operated, three sliding panels with back panel; 3 m x 1.2 m			4.500	5.000	4.750	1.778
101 104-2200	Chalkboard Vertical, motor operated, three sliding panels with back panel; 3 m x 4.8 m			3.500	4.000	3.750	2.286
101 104-3200	Chalkboard, swing leaf, any combination of chalkboard & cork, floor style, Aluminum frame 5 panels, 1.2 m x 1 m		0.125 Labor Foreman 2.000 Carpenters 1.000 Laborer 1.000 Power Tool	10.000	12.000	11.000	0.800
101 104-3450	Chalkboard, swing leaf, any combination of chalkboard & cork, wall mounted, Aluminum frame 5 panels, 1.2 m x 1 m			5.000	6.000	5.500	1.600
101 104-3900	Chalkboard, wall hung, Aluminum frame and chalktrough; 0.9 m x 1.2 m			17.000	20.000	18.500	0.471
101 104-4500	Chalkboard, wall hung, Aluminum frame and chalktrough; 1.2 m x 3.6 m			14.000	16.000	15.000	0.571
101 104-5000	Chalkboard, wall hung, Wood frame and chalktrough; 0.9 m x 1.5 m			17.000	20.000	18.500	0.471
101 104-5300	Chalkboard, wall hung, Wood frame and chalktrough; 1.2 m x 2.4 m			14.000	16.000	15.000	0.571
<b>101 600</b>	<b>TOILET COMPARTMENTS</b>						
<b>101 602</b>	<b>PARTITIONS, TOILET</b>						
101 602-0100	Cubicles, ceiling hung, marble	EA	0.125 Labor Foreman 2.000 Tiers 1.000 Laborer 1.000 Power Tool	2.000	2.000	2.000	4.000
101 602-0200	Cubicles, ceiling hung, Painted metal, plastic laminated, stainless steel or porcelain enamel			5.000	6.000	5.500	1.600
101 602-0800	Cubicles, Floor & Ceiling anchored, marble			2.750	3.000	2.875	2.909
101 602-1000	Cubicles, floor & ceiling anchored, Painted metal, plastic laminated, stainless steel or porcelain enamel			5.750	7.000	6.375	1.391
101 602-1600	Cubicles, Floor mounted marble			3.250	4.000	3.625	2.462
101 602-1700	Cubicles, floor mounted, Painted metal, plastic laminate, porcelain enamel, or stainless steel			7.000	8.000	7.500	1.143
101 602-3000	Cubicles, Wall hung partitions, painted metal, porcelain enamel or stainless steel			7.000	8.000	7.500	1.143
101 602-4000	Screens, entrance, floor mounted, 1.4 m high, 1.2 m wide marble			10.000	12.000	11.000	0.800
101 602-4300	Screens, entrance, floor mounted, 1.4 m high, 1.2 m wide, plastic laminate on particle board			17.000	20.000	18.500	0.471
101 602-4500	Screens, entrance, floor mounted, 1.4 m high, 1.2 m wide, stainless steel			17.000	20.000	18.500	0.471
101 602-4600	Urinal screen, 457 mm wide, ceiling braced, marble			8.000	9.000	8.500	1.000
101 602-4700	Urinal screen, 457 mm wide, ceiling braced, plastic laminate, porcelain enamel or stainless steel			9.000	10.000	9.500	0.889
101 602-5200	Urinal screen, 457 mm wide, floor mounted, head rail braced			8.000	9.000	8.500	1.000
101 602-5300	Urinal screen, 457 mm wide, floor mounted, head rail braced, painted metal			9.000	10.000	9.500	0.889
101 602-6700	Urinal screen, 457 mm wide, wall hung, bracket supported, painted metal			11.000	13.000	12.000	0.727
101 602-6800	Urinal screen, 457 mm wide, wall hung, bracket supported, plastic laminated, porcelain enamel or stainless steel			11.000	13.000	12.000	0.727
<b>101 850</b>	<b>SHOWER COMPARTMENTS</b>						
<b>101 852</b>	<b>PARTITIONS, SHOWER</b>						



# **DIVISION 10 : SPECIALTIES**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E.H.
101 852-0100	Shower cabinet, floor mounted, no plumbing, including base no door, painted steel, 25 mm thick walls	EA	0.125 Labor Foreman 2.000 Sheet Metal Workers 1.000 Laborer 1.000 Power Tools 1.000 Tools Set	4.500	5.000	4.750	3.556
101 852-0300	Shower cabinet, floor mounted, no plumbing, including base & fiberglass door, painted steel, 25 mm thick walls	EA	0.125 Labor Foreman 2.000 Sheet Metal Workers 1.000 Laborer 1.000 Power Tools 1.000 Tools Set	4.000	5.000	4.500	4.000
101 852-0600	Shower cabinet, floor mounted, no plumbing, including base & door, painted steel, 25 mm thick walls			4.500	5.000	4.750	3.556
101 852-1100	Shower stall, 25 mm thick wall, no base, Porcelain enameled steel			4.500	5.000	4.750	3.556
101 852-1500	Shower cabinet, circular fiberglass, floor mounted, no plumbing, no door, 915 mm diameter			3.500	4.000	3.750	4.571
101 852-1800	Shower cabinet, circular fiberglass, floor mounted, w/door & no plumbing, 915 mm diameter			2.000	3.000	2.500	8.000
101 852-2400	Shower cabinet, glass stalls, floor mounted with doors, no plumbing, chrome on brass			2.000	3.000	2.500	8.000
101 852-2700	Shower cabinet, glass stalls, floor mounted with doors, no plumbing, Anodized aluminium			3.000	4.000	3.500	5.333
101 852-2900	Marble shower stall, floor mounted, no plumbing, stock design, with shower door		0.125 Labor Foreman 2.000 Tilers 1.000 Laborer 1.000 Power Tool	1.000	1.000	1.000	8.000
101 852-4100	Shower doors, economy plastic, 610 mm wide		0.125 Labor Foreman 1.000 Sheet Metal Worker 1.000 Laborer 1.000 Tools Set	12.000	14.000	13.000	0.667
101 852-4200	Shower Door Tempered glass, economy			10.000	12.000	11.000	0.800
101 852-4500	Shower Door, Sliding, tempered glass, 1219 mm opening			8.000	9.000	8.500	1.000
101 852-4700	Shower Door, Deluxe, tempered glass, chrome on brass frame, average			6.000	7.000	6.500	1.333
101 852-5120	Shower enclosure, floor mounted, no plumbing, tempered glass, anodized alum. frame 2 panel & door, corner unit, 815 mm x 815 mm			2.500	3.000	2.750	3.200
101 852-5200	Shower surround, floor mounted, no plumbing, 3 wall, polypropylene, 815 mm x 815 mm		0.125 Labor Foreman 1.000 Carpenter 1.000 Laborer 1.000 Power Tool	8.000	9.000	8.500	1.000
101 852-5250	Shower surround, floor mounted, 2 wall, polypropylene, 815 mm x 815 mm			8.000	9.000	8.500	1.000
101 852-5300	Tub door, tempered glass & frame, average		0.125 Labor Foreman 1.000 Sheet Metal Worker 1.000 Laborer 1.000 Tools Set	10.000	12.000	11.000	0.800
101 852-5900	Tub/shower enclosure, floor mounted tempered glass, alum. frame, Average			3.000	4.000	3.500	2.667
101 852-5900	Tub/shower enclosure, floor mounted tempered glass, chrome-plated brass frame, Average			3.000	4.000	3.500	2.667
101 852-7000	Tub surround, floor mounted, no plumbing, 3 wall, fiberglass, Average		0.125 Labor Foreman 2.000 Carpenters 1.000 Laborer 1.000 Power Tool	5.000	6.000	5.500	1.600

## **102 LOUVERS, CORNER PROTECTION & ACCESS FLOORING**

### **102 100 METAL WALL LAVOURS**

#### **102 104 LOUVERS**

102 104-1000	Louvers, aluminum with screen, residential, 300 mm x 300 mm	EA	0.125 Labor Foreman 2.000 Carpenter 1.000 Laborer 1.000 Power Tool	30.000	35.000	32.500	0.267
102 104-2000	Louvers aluminum with screen, residential, 300 mm x 457 mm			26.000	30.000	28.000	0.308
102 104-2500	Louvers aluminum with screen, residential, 356 mm x 610 mm			22.000	25.000	23.500	0.364
102 104-3000	Louvers aluminum with screen, residential, 457 mm x 610 mm			20.000	23.000	21.500	0.400
102 104-5000	Louvers aluminum with screen, residential, 610 mm x 762 mm			18.000	21.000	19.500	0.444
102 104-7000	Louvers aluminum, Triangle, Adjustable, average			16.000	18.000	17.000	0.500
102 104-2100	Louvers, Midget, aluminum, 20 mm deep, 25 mm diameter			50.000	58.000	54.000	0.166
102 104-2150	Louvers, Midget, aluminum, 20 mm deep, 76 mm diameter			35.000	40.000	37.500	0.229
102 104-2200	Louvers, Midget, aluminum, 20 mm deep, 100 mm diameter			30.000	35.000	32.500	0.267
102 104-2250	Louvers, Midget, aluminum, 20 mm deep, 150 mm diameter			20.000	23.000	21.500	0.400
102 104-2300	Ridge vent louver strip, mill finish	LM	0.125 Labor Foreman 1.000 Sheet Metal Worker 1.000 Laborer 1.000 Tools Set	55.000	65.000	59.000	0.143
102 104-2330	Soffit vent, continuous louver, 76 mm wide, aluminum	EA	0.125 Labor Foreman 1.000 Carpenter 1.000 Laborer 1.000 Power Tool	65.000	75.000	70.000	0.125
102 104-7000	Vinyl gable vent louver, 200 mm x 200 mm or 300 mm x 300 mm			30.000	35.000	32.500	0.267
102 104-7080	Vinyl gable vent louver, 300 mm x 457 mm			26.000	30.000	28.000	0.308



# **DIVISION 10 : SPECIALTIES**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E.H.
102 104-7200	Vinyl gable vent louver, 356 mm x 610 mm	↓	↓	22.000	25.000	23.500	0.364
<b>102 600</b>	<b>WALL &amp; CORNER GUARDS</b>						
<b>102 604</b>	<b>CORNER GUARDS</b>						
102 604-0010	Corner guard, steel angle, 25 mm x 25 mm x 6 mm, 2.2 kg/m	LM	0.375 Struct. Steel Foreman 2.000 Struct. Steel Workers 1.000 Steel Welder 2.000 Laborers 1.000 Gas Welding Machine 1.000 Power Tool	60.000	69.000	64.500	0.267
102 604-0200	Corner guards, steel angle, 76 mm x 76 mm x 8 mm, 9.0 kg/m	↓	↓	52.000	60.000	56.000	0.308
102 604-0300	Corner guards, steel angle, 100 mm x 100 mm x 8 mm, 12 kg/m	↓	↓	45.000	52.000	48.500	0.356
102 604-0500	Cast iron wheel guards, 915 mm high	EA	↓	16.000	16.000	17.000	1.000
102 604-0600	Cast iron wheel guards, 1524 mm high	↓	↓	11.000	13.000	12.000	1.455
102 604-0800	Pipe bumper for truck doors, 2.4 m long, 200 mm diameter (8"), filled	↓	↓	12.000	14.000	13.000	1.333
<b>102 608</b>	<b>CORNER PROTECTION</b>						
102 608-0100	Corner Protection, Stainless steel, 16 ga., adhesive mount, 89 mm leg	LM	0.125 Labor Foreman 1.000 Structural Steel Worker 1.000 Power Tool	20.000	23.000	21.500	0.400
102 608-0200	Corner Protection, Stainless steel, 12 ga., adhesive mount, 89 mm leg	↓	↓	20.000	23.000	21.500	0.400
102 608-0300	Corner Protection, Stainless steel, 12 ga., Screw mount, 89 mm leg	↓	↓	17.000	20.000	18.500	0.471
102 608-0500	Corner Protection, Vinyl acrylic, adhesive mount, 76 mm leg	↓	1.000 Labor Foreman 1.000 Carpenter 1.000 Laborer 1.000 Power Tool	45.000	52.000	48.500	0.178
102 608-0600	Corner Protection, Vinyl acrylic, screw mounted, 76 mm leg	↓	↓	28.000	32.000	30.000	0.286
102 608-0700	Corner Protection, Clear plastic, screw mounted, 64 mm	↓	↓	21.000	24.000	22.500	0.381
102 608-1000	Corner Protection, Vinyl cover, aluminum retainer, surface mount, 76 mm x 76 mm	↓	↓	17.000	20.000	18.500	0.471
102 608-1100	Corner Protection, Vinyl cover, aluminum retainer, flush mount, 76 mm x 76 mm	↓	↓	11.000	13.000	12.000	0.727
<b>102 612</b>	<b>WALLGUARD</b>						
102 612-0500	Wall guard rail, neoprene, aluminum backing, 38 mm x 51 mm	LM	0.125 Labor Foreman 1.000 Carpenter 1.000 Laborer 1.000 Power Tool	45.000	52.000	48.500	0.178
102 612-1200	Wall Guard, Bed bumper, vinyl acrylic, aluminum retainer, 530 mm long	EA	↓	10.000	12.000	11.000	0.800
102 612-1300	Wall Guard, Bed bumper, vinyl acrylic, aluminum retainer, 1340 mm long with aligner	↓	↓	8.000	9.000	8.500	1.000
102 612-2000	Wall Guard, Crash rail, vinyl cover, alum. retainer, 25 mm x 200 mm	LM	↓	25.000	29.000	27.000	0.320
102 612-3010	Wall Guard, Handrail/bumper, Vinyl cover, aluminum retainer, flat rail, bracket mounted, 140 mm	↓	↓	22.000	25.000	23.500	0.364
<b>102 700</b>	<b>ACCESS FLOORING</b>						
<b>102 705</b>	<b>PEDESTAL ACCESS FLOORS</b>						
102 705-0020	Access floor, particle board or steel panels, no covering, 600 mm x 600 mm x 55 mm on snap prop stringers 200 mm high, less than 600 m2	SQM	0.125 Labor Foreman 2.000 Carpenters 1.000 Laborer 1.000 Leveling Laser tools	25.000	29.000	27.000	0.320
102 705-0100	Access floor, particle board with metal covering, 600 mm x 600 mm x 55 mm on snap prop stringers 200 mm high, over 600 m2	↓	↓	30.000	35.000	32.500	0.267
102 705-0300	Access floor, aluminum panels 600 mm x 600 mm on stringers 200 mm high	↓	↓	35.000	40.000	37.500	0.229
102 705-0400	Access floor, steel panels with carpet covering on stringer 600 mm high	↓	↓	25.000	29.000	27.000	0.320
102 705-0700	Access floor, steel panels with high pressure laminate covering, stringers 600 mm high	↓	↓	25.000	29.000	27.000	0.320
102 705-0800	Access floor, extra heavy duty steel panels 600 mm x 600 mm x 64 mm with vinyl covering, stringer up to 600 mm high	↓	↓	20.000	23.000	21.500	0.400
102 705-0850	Access floor, fire stop, 900 mm long, upto 600 mm high	EA	↓	32.000	37.000	34.500	0.250
102 705-1000	Machine cutout in access floor	↓	↓	15.000	17.000	16.000	0.533
102 705-1100	Air conditioning grille cutout 300 mm x 300 mm	↓	↓	15.000	17.000	16.000	0.533
102 705-1200	Access floor approach ramp, average	SQM	↓	8.000	9.000	8.500	1.000
<b>103</b>	<b>FIREPLACES, EXT. SPECIALISTS &amp; FLAGPOLES</b>						
<b>103 050</b>	<b>PREFABRICATED FIREPLACES</b>						
<b>103 054</b>	<b>FIREPLACE, PREFABRICATED</b>						
103 050-0100	Fireplace, prefabricated free standing or wall hung with hood & screen, Average	EA	0.125 Labor Foreman 1.000 Carpenter 1.000 Laborer 1.000 Power Tools	1.500	2.000	1.750	5.333
103 050-0500	Fireplace, chimney, double wall, stainless steel, over 2.6 m, 180 mm diameter.	LM	↓	9.000	10.000	9.500	0.889
103 050-0600	Fireplace, chimney, double wall, stainless steel, over 2.6 m, 250 mm diameter	↓	↓	8.500	10.000	9.250	0.941
103 050-0700	Fireplace, chimney, double wall, stainless steel, over 2.6 m, 300 mm diameter,	↓	↓	8.000	9.000	8.500	1.000

# **DIVISION 10 : SPECIALTIES**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E.H.
103 050-0900	Fireplace, chimney, double wall, stainless steel, over 2.6 m, 356 mm diameter	EA		7.500	9.000	8.250	1.067
103 050-2000	Fireplace, built-in, 915 mm hearth, radiant	EA		1.500	2.000	1.750	5.333
103 050-2400	Fireplace, built-in, 1.2 m hearth, radiant	EA		1.250	2.000	1.625	6.400
103 050-2500	Fireplace, built-in, 1.2 m hearth, radiant, with recirculating fan	EA		0.900	1.000	0.950	8.889
<b>103 460</b>	<b>CUPOLAS</b>						
103 460-0300	Cupola, Prefabricated, stock unit, pine, 585 mm square, 840 mm high, aluminium roof	EA	0.125 Labor Foreman 1.000 Carpenter 1.000 Laborer 1.000 Power Tool	4.000	5.000	4.500	2.000
103 460-0400	Cupola, Prefabricated, stock unit, pine, 585 mm square, 840 mm high, copper roof	EA		3.500	4.000	3.750	2.286
103 460-1000	Cupola, Prefabricated, stock unit, pine, 915 mm hexagonal, 1270 mm high, copper roof	EA		3.500	4.000	3.750	2.286
103 460-0300	Cupola, Prefabricated, stock unit, fiberglass, 1.8 m base, 1.7 m high	EA		4.000	5.000	4.500	2.000
<b>103 520</b>	<b>GROUND SET FLAGPOLES</b>						
<b>103 524</b>	<b>FLAGPOLE</b>						
	<i>Not including base or foundation</i>						
103 524-0100	Flagpole, Aluminum, tapered, ground set 6 m high	EA	0.125 Labor Foreman 1.000 Skilled Laborer 1.000 Common Laborer 1.000 Equipment Operator 1.000 Crane 11 Ton	3.000	4.000	3.500	2.667
103 524-0300	Flagpole, Aluminum, tapered, ground set 9 m high	EA		2.250	3.000	2.625	3.556
103 524-0600	Flagpole, Aluminum, tapered, ground set 15 m high	EA		1.500	2.000	1.750	5.333
103 524-0800	Flagpole, Aluminum, tapered, ground set 21 m high	EA		1.200	2.000	1.600	6.667
103 524-3000	Flagpole, Fiberglass, tapered, ground set, 7.0 m high	EA		3.000	4.000	3.500	2.667
103 524-3300	Flagpole, Fiberglass, tapered, ground set, 12.0 m high	EA		1.750	2.000	1.875	4.571
103 524-3400	Flagpole, Fiberglass, tapered, ground set, 15 m high	EA		1.500	2.000	1.750	5.333
103 524-3500	Flagpole, Fiberglass, tapered, ground set, 18.0 m high	EA		1.400	2.000	1.700	5.714
103 524-4700	Flagpole, concrete, direct imbedded installation, internal halyard, 12 m high	EA		3.000	4.000	3.500	2.667
103 524-5000	Flagpole, concrete, direct imbedded installation, internal halyard, 18 m high	EA		2.500	3.000	2.750	3.200
103 524-5200	Flagpole, concrete, direct imbedded installation, internal halyard, 24 m high	EA		2.000	3.000	2.500	4.000
103 524-6800	Flag pole, wood poles, tapered, clear vertical grain fir with tilting base, no foundation, 150 mm butt, 9 m high	EA	0.125 Labor Foreman 2.000 Skilled Laborer 2.000 Common Laborer 1.000 Equipment Operator 1.000 Crane 11 Ton	3.000	4.000	3.500	2.667
103 524-7300	Foundation for flagpoles, including excavation and concrete to 10.7 m high poles	EA	0.125 Labor Foreman 3.000 Carpenters 1.000 Steel Fixer 2.000 Laborers 0.125 Equipment Operator 1.000 Power Tools 1.000 Excavator	10.000	12.000	11.000	1.600
103 524-7600	Foundations for flagpoles, including excavation and concrete, to 12 m to 15 m high poles	EA		3.250	4.000	3.625	4.923
103 524-7700	Foundations for flagpoles, including excavation and concrete, over 18 m high poles	EA		1.750	2.000	1.875	9.143
<b>103 540</b>	<b>WALL MOUNTED FLAGPOLES</b>						
<b>103 544</b>	<b>FLAGPOLE</b>						
103 540-0100	Flagpole structure mounted, fiberglass, vertical wall set, 7 m long	EA	0.125 Labor Foreman 1.000 Skilled Laborer 1.000 Common Laborer 1.000 Equipment Operator 1.000 Crane 11 Ton	2.000	2.000	2.000	4.000
103 540-1300	Flagpole structure mounted, aluminum, vertical wall set, tapered, with base 6 m	EA		1.750	2.000	1.875	4.571
<b>104</b>	<b>IDENTIFYING &amp; PEDESTRIAN CONTROL DEVICES</b>						
<b>104 100</b>	<b>DIRECTORIES</b>						
<b>104 104</b>	<b>DIRECTORY BOARDS</b>						
104 104-0010	Directory boards, plastic, glass covered, 760 mm x 500 mm	EA	0.125 Labor Foreman 2.000 Carpenters 1.000 Laborer 1.000 Power Tool	4.000	5.000	4.500	2.000
104 104-0100	Directory boards, plastic, glass covered, 914 mm x 1220 mm	EA		2.500	3.000	2.750	3.200
104 104-0300	Directory boards, grooved cork, glass covered, 914 mm x 1220 mm	EA		4.000	5.000	4.500	2.000
104 104-0600	Directory boards, black felt, glass covered, 760 mm x 500 mm	EA		4.000	5.000	4.500	2.000
104 104-0700	Directory boards, plastic, glass covered, black felt, 914 mm x 1220 mm	EA		2.500	3.000	2.750	3.200
104 104-0900	Directory boards, outdoor, weatherproof, black plastic, 914 mm x 610 mm	EA		2.500	3.000	2.750	3.200
104 104-1000	Directory boards, outdoor, weatherproof, black plastic, 914 mm x 914 mm	EA		2.000	2.000	2.000	4.000
104 104-1800	Directory boards, indoor, open face, 457 mm x 610 mm	EA		6.000	7.000	6.500	1.333



# **DIVISION 10 : SPECIALTIES**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E.H.
104 104-1900	Directory boards, indoor,open face, 610 mm x 914 mm			6.000	7.000	6.500	1.333
104 104-2100	Directory boards,indoor,open face, 914 mm x 1219 mm			5.000	6.000	5.500	1.600
104 104-2400	Building directory,aluminum, black felt panels, 1 door, 610 mm x 457 mm			3.000	3.000	3.000	2.667
104 104-2600	Building directory, aluminum, black felt panels, 1 door, 1220 mm x 815 mm			2.500	3.000	2.750	3.200
104 104-2700	Building directory, aluminum, black felt panels, 2 doors, 914 mm x 1220 mm			2.000	2.000	2.000	4.000
104 104-2900	Building directory, aluminum, black felt panels, 2 doors, 1220 mm x 1524 mm			1.000	1.000	1.000	8.000
<b>104 150 BULLETIN BOARDS</b>							
<b>104 151 BULLETIN BOARD</b>							
104 151-0100	Bulletin board,Cork sheets, unbacked, no frame, upto 13 mm thick	SQM	0.125 Labor Foreman 2.000 Carpenters 1.000 Laborer 1.000 Power Tool	25.000	29.000	27.000	0.320
104 151-1200	Bulletin board,6 mm vinyl cork, on 6 mm hardboard, no frame			25.000	29.000	27.000	0.320
104 151-2120	Bulletin board,Prefabricated, 6 mm cork, 914 mm x 1524 mm with frame	EA		15.000	17.000	16.000	0.533
104 151-2200	Bulletin board,Prefabricated, 6 mm cork, 1.2 m x 2.4 m with frame			12.000	14.000	13.000	0.667
104 151-2220	Bulletin board,Prefabricated, 6 mm cork, 1.2 m x 3.6 m with frame			10.000	12.000	11.000	0.800
104 151-2240	Bulletin board case, single glass door, with lock 914 mm x 610 mm			10.000	12.000	11.000	0.800
104 151-2400	Bulletin board,glass enclosed cabinets, aluminum, cork panel, hinged doors, 914 mm x 914 mm, 1 door			10.000	12.000	11.000	0.800
104 151-2500	Bulletin board,Glass enclosed cabinet, aluminum, cork panel, hinged doors, 1.2 m x 1.2 m, 2 doors			9.000	10.000	9.500	0.889
104 151-2600	Bulletin board,Glass enclosed cabinets, aluminum, cork panel, hinged doors, 1.2 m x 2.1 m, 3 doors			8.000	9.000	8.500	1.000
104 151-2800	Bulletin board,Glass enclosed cabinets, aluminum, cork panel, hinged doors, 1.2 m x 3 m, 4 doors & 4 lights			6.000	7.000	6.500	1.333
<b>104 155 CONTROL BOARDS</b>							
104 155-0100	Control board,Magnetic, porcelain finish, 610 mm x 914 mm	EA	0.125 Labor Foreman 2.000 Carpenters 1.000 Laborer 1.000 Power Tool	7.000	8.000	7.500	1.143
104 155-0300	Control board,Magnetic, porcelain finish, 1.2 m x 1.8 m			5.000	6.000	5.500	1.600
104 155-0400	Control board,Magnetic, porcelain finish, 1.2 m x 2.4 m			4.000	5.000	4.500	2.000
<b>104 300 SIGNS</b>							
<b>104 304 SIGNS:</b>							
104 304-0100	Sign,cast aluminum or bronze,with 100 mm high & 13 mm deep letters	EA	0.125 Labor Foreman 1.000 Carpenter 1.000 Laborer 1.000 Power Tool	25.000	29.000	27.000	0.320
104 304-0600	Sign,cast aluminum or bronze,with 200 mm high & 20 mm deep letters			15.000	17.000	16.000	0.533
104 304-1200	Sign,cast aluminum or bronze,with 300 mm high & 20 mm deep letters			10.000	12.000	11.000	0.800
104 304-1600	Sign,cast aluminum or bronze,with 356 mm high & 60 mm deep letters			10.000	12.000	11.000	0.800
104 304-1800	Sign,Fabricated stainless steel, with 152 mm high, 50 mm deep letters			15.000	17.000	16.000	0.533
104 304-2100	Sign,Fabricated stainless steel,with 457 mm high, 76 mm deep letters			10.000	12.000	11.000	0.800
104 304-2200	Sign,Fabricated stainless steel,with 610 mm high, 100 mm deep, letters			8.000	9.000	8.500	1.000
104 304-4800	Signs, reflective aluminum street signs, double face, 2-way or 4-way with bracket			15.000	17.000	16.000	0.533
104 304-5100	Exit signs, 24 ga. aluminum, 250 mm x 180 mm surface mounted			20.000	23.000	21.500	0.400
<b>104 560 TURNSTILES</b>							
<b>104 561 TURNSTILES</b>							
104 561-0100	Turnstiles one way, 4 arm, 1.1 m diameter, electric	EA	0.125 Labor Foreman 2.000 Carpenters 0.500 Electrician 1.000 Laborer 1.000 Power Tool	1.250	1.000	1.125	6.400
104 561-0300	Turnstiles,High security, galv., 1.6 m diameter, 2.1 m high, manual			1.250	1.000	1.125	6.400
104 561-0350	Turnstiles,High security, galv., 1.6 m diameter, 2.1 m high, electric			0.750	1.000	0.875	10.667
104 561-0420	Turnstiles,Three arm, 610 mm opening, light duty, manual			2.250	3.000	2.625	3.556
104 561-0450	Turnstiles,Three arm, 610 mm opening, heavy duty, manual			1.500	2.000	1.750	5.333
104 561-0450	Turnstiles,one way gate with horizontal bars, 1.6 m diameter 7 2.1 m high.			0.750	1.000	0.875	10.667
<b>105 LOCKERS, PROTECTIVE COVERS &amp; POSTAL SPECIALTIES</b>							
<b>105 050 METAL LOCKERS</b>							
105 050-0010	Locker,steel, baked enamel, 1.5 m or 1.8 m high, single tier, average	OPENING	0.125 Labor Foreman 1.000 Sheet Metal Worker 1.000 Helper 1.000 Power Tool	8.000	9.000	8.500	1.000
105 050-0300	Locker, steel, baked enamel, 2 tier, 1.5 m or 1.8 m total height. Average			6.000	7.000	6.500	1.333

## DIVISION 10 : SPECIALTIES

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E.H.
105 050-0600	Locker,Steel, baked enamel, 5 tier box lockers, 1.5 m or 1.8 m total height, Average			20.000	23.000	21.500	0.400
105 050-0900	Locker,Steel, baked enamel, 6 tier box lockers, 1.5 m or 1.8 m total height, Average			25.000	29.000	27.000	0.320
105 050-2500	Locker units for 16-persons with clothing rack, 70 mm wide x 380 mm deep x 1.8 m high	EA		7.000	8.000	7.500	1.143
105 050-3100	Wall mounted lockers,4 persons with coat bar, 1.2 m wide x 457 mm deep x 305 mm high			7.000	8.000	7.500	1.143
<b>105 380</b>	<b>CANOPIES</b>						
<b>105 384</b>	<b>CANOPIES</b>						
105 384-0010	Canopy,Wali hung, aluminum, 0.8 mm prefinished, 2.4 m x 3 m	EA	0.125 Labor Foreman 2.000 Skilled Laborer 2.000 Common Laborer 1.000 Equipment Operator 1.000 Crane 11 Ton	1.500	2.000	1.750	5.333
105 384-0700	Canopy,Wali hung, aluminum, 0.8 mm prefinished, 3 m x 6 m	EA	0.125 Labor Foreman 2.000 Skilled Laborer 2.000 Common Laborer 1.000 Equipment Operator 1.000 Crane 11 Ton	1.250	1.000	1.125	6.400
105 384-1700	Canopy,Wali hung, aluminum, 0.8 mm prefinished, 3 m x 12 m			0.650	1.000	0.825	12.308
105 384-1720	Canopy,free standing unit,aluminum,0.8mm,prefinished, 3 m & 6 m			1.100	1.000	1.050	7.273
105 384-1780	Canopy,free standing unit,aluminum,0.8mm,prefinished, 3 m & 12 m			0.500	1.000	0.750	16.000
105 384-2500	Aluminum entrance canopies, flat soffit, 0.8 mm, 1.1 m x 1.2 m, clear or bronze anodized		0.125 Labor Foreman 2.000 Carpenters 1.000 Laborer 1.000 Power Tool	3.500	4.000	3.750	2.286
105 384-3300	Aluminum entrance canopies, flat soffit, 0.8 mm, 1.4 m x 3 m, clear or bronze anodized			1.500	2.000	1.750	5.333
105 384-4700	Canvas awnings, including canvas, frame & lettering, Average	SQM		7.000	8.000	7.500	1.143
105 384-7000	Carport, baked vinyl finish, 0.8 mm, 6.1 m x 3.00 m, no foundations, Average	CAR	0.125 Labor Foreman 2.000 Skilled Laborer 2.000 Common Laborer 1.000 Equipment Operator 1.000 Crane 11 Ton	3.500	4.000	3.750	2.286
105 384-7500	Walkway cover, to 3.6 m wide, steel with vinyl finish 0.8 mm no foundations, Average	SQM		20.000	23.000	21.500	0.400
<b>105 510</b>	<b>MAIL CHUTES</b>						
<b>105 511</b>	<b>MAIL CHUTES</b>						
105 511-0010	Mail Chutes,Aluminum & glass, 360 mm wide, 117 mm deep	FLOOR	0.125 Labor Foreman 2.000 Sheet Metal Workers 1.000 Laborer 1.000 Tools Set 1.000 Power Tool	4.000	5.000	4.500	4.000
105 511-0100	Mail Chutes,Aluminum & glass, 362 mm wide, 220 mm deep			3.750	4.000	3.875	4.267
105 511-0300	Mail Chutes,Aluminum & glass, 220 mm wide, 90mm deep			5.000	6.000	5.500	3.200
105 511-0400	Mail Chutes,Bronze or stainless, 220 mm x 90 mm deep			4.000	5.000	4.500	4.000
105 511-0600	Mail chutes, lobby collection boxes, aluminum	EA		5.000	6.000	5.500	3.200
105 511-0700	Mail chutes, lobby collection boxes, bronze or stainless			4.000	5.000	4.500	4.000
<b>105 520</b>	<b>MAIL BOXES</b>						
<b>105 521</b>	<b>MAIL BOXES</b>						
105 520-0010	Mail box Horiz., key lock, 127 mm high x 150 mm wide x 380 deep, rear or front loading	EA	0.125 Labor Foreman 1.000 Carpenter 1.000 Laborer 1.000 Power Tool	30.000	35.000	32.500	0.267
105 521-0200	Double, 127 mm high x 305 mm wide x 380 mm deep, rear or front loading			22.000	25.000	23.500	0.364
105 521-1800	Letter collection box			7.000	8.000	7.500	1.143
105 521-2200	Post office counter window,with grille			3.000	3.000	3.000	2.667
<b>106</b>	<b>PARTITIONS &amp; STORAGE SHELVING</b>						
<b>106 050</b>	<b>WIRE MESH PARTITIONS</b>						
<b>106 052</b>	<b>PARTITIONS, WOVEN WIRE</b>						
106 052-0300	Partition,Woven Wire,Channel frame, 38 mm diamond mesh, 10 ga. wire, painted wall panels, 1.2 m wide, 2.1 m high	EA	0.125 Labor Foreman 2.000 Carpenters 1.000 Laborer 1.000 Power Tool	30.000	35.000	32.500	0.267
106 052-0600	Partition,Woven Wire,Channel frame, 38 mm diamond mesh, 10 ga. wire, painted wall panels, 1.2 m wide, 3m high			20.000	23.000	21.500	0.400
106 052-0900	Partition,Woven Wire,Channel frame, 38 mm diamond mesh, 10 ga wire, painted,Ceiling panels, 3 m long, 0.6 m wide			30.000	25.000	27.500	0.267
<b>106 100</b>	<b>FOLDING GATES</b>						
<b>106 101</b>	<b>SECURITY GATES :</b>						
	<i>Security gates for roll up type,see div.083302</i>						



# **DIVISION 10 : SPECIALTIES**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E.H.
106 101-0300	Scissors type folding security gate, painted steel, single, 1.8 m high, 1.6 m wide	OPENING	0.125 Labor Foreman 2.000 Struct. Steel workers 1.000 Laborer 1.000 Power Tool	5.000	6.000	5.500	1.600
106 101-0400	Scissors type folding security gate, painted steel, single, 1.8 m high, 2.2 m wide			5.000	6.000	5.500	1.600
106 101-0600	Scissors type folding security gate, painted steel, double, 2.2 m high, 2.4 m wide			3.000	3.000	3.000	2.667
106 101-0700	Scissors type folding security gate, painted steel, double, 2.2 m high, 3.6 m wide			3.000	3.000	3.000	2.667
106 101-0750	Scissors type folding security gate, painted steel, double, 2.2 m high, 4.2 m wide			2.500	3.000	2.750	3.200
106 101-0900	Security Door gate, folding steel, 1.2 m wide, 1.5 m high			5.000	6.000	5.500	1.600
106 101-1300	Security Window gates, folding, steel 610 mm to 1.2 m wide, 767 mm high			5.000	6.000	5.500	1.600
<b>106 150</b>	<b>DEMOUNTABLE PARTITIONS</b>						
<b>106 152</b>	<b>PARTITIONS, MOVABLE OFFICE:</b>						
106 152-0900	Demountable partition, vinyl clad gypsum system on 50 mm or 64 mm steel studs, 2.75 m high, 76 mm to 95 mm thick	LM	0.125 Labor Foreman 2.000 Carpenters 1.000 Laborer 1.000 Power Tool	20.000	23.000	21.500	0.400
106 152-1000	Demountable partition, fabric clad gypsum system on 50 mm or 64 mm steel studs, 2.75 m high, 76 mm to 95 mm thick	LM	0.125 Labor Foreman 2.000 Carpenters 1.000 Laborer 1.000 Power Tool	17.000	20.000	18.500	0.471
106 152-1300	Demountable partition, steel clad gypsum system on 50 mm or 64 mm steel studs, 2.75 m high, 76 mm to 95 mm thick			15.000	17.000	16.000	0.533
106 152-1900	Demountable partition system, aluminum framing, vinyl clad hardboard, paper honeycomb core panel, 44 mm to 64 mm thick, 2.75 m high			20.000	23.000	21.500	0.400
106 152-2100	Demountable partition system, aluminum framing, vinyl clad hardboard, paper honeycomb core panel, 44 mm to 64 mm thick, 2.1 m high			23.000	26.000	24.500	0.348
106 152-2200	Demountable partition system, aluminum framing, vinyl clad hardboard, paper honeycomb core panel, 44 mm to 64 mm thick, 1.5 m high			30.000	35.000	32.500	0.267
106 152-3100	Demountable partition, movable steel walls, modular system, unitized panels, 2.75 m high, 1.2 m wide, baked enamel, prefinished			23.000	26.000	24.500	0.348
106 152-3200	Demountable partition, movable steel walls, modular system, unitized panels, 2.75 m high, 1.2 m wide, fabric clad steel			17.000	20.000	18.500	0.471
106 152-5310	Demountable partition, trackless wall, cork finish, semi-acoustic, 40 mm thick, average	SQM		24.000	28.000	26.000	0.333
106 152-6100	Demountable partition in plant modular office system, w/prehung steel door, 76 mm thick, honeycomb core panels 3.6 m x 3.6 m, double wall	EA		4.000	5.000	4.500	2.000
<b>106 300</b>	<b>PORTABLE PARTITIONS</b>						
<b>106 302</b>	<b>PARTITIONS, HOSPITAL</b>						
106 302-0010	Curtain track, box channel, ceiling mounted	LM	0.125 Labor Foreman 2.000 Carpenters 1.000 Laborer 1.000 Power Tool	50.000	58.000	54.000	0.160
106 302-0100	Curtain track, box channel, ceiling, suspended			35.000	40.000	37.500	0.229
<b>106 304</b>	<b>PARTITIONS, PORTABLE</b>						
106 302-2100	Partitions, portable, divider panels, free standing, fiber core, fabric face straight, 914 mm long, 1.2 m high	LM	0.125 Labor Foreman 2.000 Carpenters 1.000 Laborer 1.000 Power Tool	35.000	40.000	37.500	0.229
106 302-2500	Partitions, portable, divider panels, free standing, fiber core, fabric face straight, 914 mm long, 1.8 m high			26.000	30.000	28.000	0.306
106 302-2600	Partitions, portable, divider panels, free standing, fiber core, fabric face straight, 1.8 m long, 1.5 m high			55.000	63.000	59.000	0.145
106 302-3100	Partitions, portable, divider panels, free standing, fiber core, fabric face curved, 1.8 m long, 1.5 m high			32.000	37.000	34.500	0.250
106 302-3450	Acoustical panels, 60 to 90 noise reduction coefficient, 914 mm long, 1.5 m high			32.000	37.000	34.500	0.250
106 302-3600	Acoustical panels, 60 to 90 noise reduction coefficient, 1.5 m long, 1.5 m high			50.000	58.000	54.000	0.180
106 302-3750	Acoustical panels, 60 to 90 noise reduction coefficient, 1.8 m long, 1.8 m high			45.000	52.000	48.500	0.178
<b>106 520</b>	<b>PANEL PARTITIONS</b>						
<b>106 522</b>	<b>PARTITIONS, FOLDING LEAF:</b>						
106 520-0100	Folding Partition, Acoustic, wood, vinyl faced, to 5.5 m high, 29 kg/m <sup>2</sup> , Average	SQM	0.125 Labor Foreman 2.000 Carpenters 1.000 Laborer 1.000 Power Tool	4.000	5.000	4.500	2.000
106 520-0600	Folding Partition, Wood, low acoustical type, 22 kg/m <sup>2</sup> , to 4.3 m high			5.000	6.000	5.500	1.600
106 520-1100	Folding Partition, Steel, acoustical, 44 to 60 kg/m <sup>2</sup> , vinyl faced, average			6.000	7.000	6.500	1.333
106 520-1700	Folding Partition, Aluminum framed, acoustical, to 3.7 m high, 27 kg/m <sup>2</sup> , Average			4.000	5.000	4.500	2.000
<b>106 550</b>	<b>ACCORDION PARTITIONS</b>						
<b>106 552</b>	<b>PARTITIONS, FOLDING ACCORDION:</b>						
106 552-0300	Partitions, folding accordion, vinyl covered, over 12 m <sup>2</sup> , frame not included, residential, 6 kg/m <sup>2</sup> , 2.4 m maximum height	SQM	0.125 Labor Foreman 2.000 Carpenters 1.000 Laborer 1.000 Power Tool	32.000	37.000	34.500	0.250



# **DIVISION 10 : SPECIALTIES**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E.H.
106 552-0400	Partitions, folding accordion, vinyl covered, over 12 m2, frame not included, commercial, 6.5 kg/m <sup>2</sup> , 2.4 m maximum height			25.000	29.000	27.000	0.320
106 552-0600	Partitions, folding accordion, vinyl covered, over 12 m2, frame not included, commercial, 9.7 kg/m <sup>2</sup> , 5 m maximum height			17.000	20.000	18.500	0.471
106 552-0700	Partitions, folding accordion, vinyl covered, over 12 m2, frame not included, industrial, 19.5 kg/m <sup>2</sup> , 6 m maximum height			8.000	9.000	8.500	1.000
106 552-0900	Partitions, folding accordion, vinyl covered, over 12 m2, frame not included, acoustical, 15 kg/m <sup>2</sup> , 5 m maximum height			12.000	14.000	13.000	0.667
106 552-1200	Partitions, folding accordion, vinyl covered, over 12 m2, frame not included, acoustical, 24 kg/m <sup>2</sup> , 6 m maximum height			11.000	13.000	12.000	0.727
106 552-1300	Partitions, folding accordion, vinyl covered, over 12 m2, frame not included, acoustical, 27 kg/m <sup>2</sup> , 5 m maximum height			10.000	12.000	11.000	0.800
106 552-1400	Partitions, folding accordion, vinyl covered, over 12 m2, frame not included, acoustical, fire rated, 22 kg/m <sup>2</sup> , 6 m maximum height			18.000	21.000	19.500	0.444
<b>106 750</b>	<b>STORAGE &amp; SHELVEING</b>						
<b>106 752</b>	<b>PARTS BINS:</b>						
106 750-0100	Parts Bins, Metal, gray baked enamel finish, 1.9m high, 914 mm wide, 12 Bins, 457 x 300 mm, 300 mm deep	EA	2 Common laborers	7.000	8.000	7.500	0.000
106 750-1000	Parts Bins, Metal, gray baked enamel finish, 2.2 m high, 914 mm wide, 84 Bins, 150 x 150 mm, 600 mm deep	"	"	5.000	6.000	5.500	0.000
<b>106 754</b>	<b>SHELVEING</b>						
106 754-0010	Shelving, Metal, industrial, cross-braced, 914 mm wide, 300 mm deep	SQM Shelf	0.125 Labor Foreman 1.000 Struc. Steel Worker 1.000 Power Tool	12.000	14.000	13.000	0.667
106 754-0100	Shelving, Metal, industrial, cross-braced, 914 mm wide, 600 mm deep			20.000	23.000	21.500	0.400
106 754-0300	Shelving, Metal, industrial, cross-braced, 1.2 m wide, 300 mm deep			13.000	15.000	14.000	0.615
106 754-0400	Shelving, Metal, industrial, cross-braced, 1.2 m wide, 600 mm deep			22.000	25.000	23.500	0.364
106 754-1500	Shelving, Fully enclosed, sides and back, 914 mm wide, 300 mm deep			10.000	12.000	11.000	0.800
106 754-1600	Shelving, Fully enclosed, sides and back, 914 mm wide, 600 mm deep			17.000	20.000	18.500	0.471
106 754-1800	Shelving, Fully enclosed, sides and back, 1.2 m wide, 300 mm deep			11.000	13.000	12.000	0.727
106 754-1900	Shelving, Fully enclosed, sides and back, 1.2 m wide, 600 mm deep			18.000	21.000	19.500	0.444
106 754-2200	Shelving, wide span 700 kg capacity/shelf, 1.8 m wide 600mm deep			25.000	29.000	27.000	0.320
106 754-4000	Shelving, pallet rack, steel frame 2200 kg capacity, 2.4 m long, 914 mm deep		0.125 Struc. Steel Foreman 2.000 Struc. Steel Workers 1.000 Laborers 1.000 Power tool	45.000	52.000	48.500	0.178
<b>107</b>	<b>TELEPHONE SPECIALTIES</b>						
<b>107 550</b>	<b>TELEPHONE ENCLOSURES</b>						
<b>107 551</b>	<b>TELEPHONE ENCLOSURE:</b>						
107 550-0300	Telephone enclosure, shelf type, wall hung, average	EA	0.125 Labor Foreman 2.000 Carpenters 1.000 Laborer 1.000 Power Tool	4.000	5.000	4.500	2.000
107 550-0600	Telephone enclosure, booth type, painted steel, indoor, average			1.250	1.000	1.125	6.400
107 550-1300	Telephone enclosure, outdoor, acoustical, on post			2.500	3.000	2.750	3.200
107 550-1400	Outdoor, phone carousel, pedestal mounted with dividers			0.500	1.000	0.750	16.000
<b>108</b>	<b>TOILET &amp; BATH ACCESSORIES</b>						
<b>108 200</b>	<b>BATH ACCESSORIES</b>						
<b>108 204</b>	<b>BATHROOM ACCESSORIES</b>						
108 204-0200	Curtain rod, stainless steel, 1.5 m long, 32 mm diameter	EA	0.125 Labor Foreman 1.000 Carpenter 1.000 Laborer 1.000 Power Tool	17.000	20.000	18.500	0.471
108 204-0500	Dispenser units, combined soap & towel dispensers, mirror & shelf, flush mounted			12.000	14.000	13.000	0.667
108 204-0600	Towel dispenser and waste receptacle, 68 liter capacity			12.000	14.000	13.000	0.667
108 204-0800	Grab bar, straight, 32 mm dia., stainless steel, 457 mm long			30.000	35.000	32.500	0.267
108 204-0900	Grab bar, straight, 32 mm dia., stainless steel, 610 mm long			28.000	32.000	30.000	0.286
108 204-1000	Grab bar, straight, 32 mm dia., stainless steel, 760 mm long			26.000	30.000	28.000	0.308
108 204-1100	Grab bar, straight, 32 mm dia., stainless steel, 914 mm long			24.000	28.000	26.000	0.333
108 204-1200	Grab bar, straight, 38 mm dia., stainless steel, 610 mm long			28.000	32.000	30.000	0.286
108 204-1500	Tub bar, stainless steel, 32 mm diameter, 610 mm x 914 mm			17.000	20.000	18.500	0.471
108 204-1600	Tub bar, stainless steel, 32 mm diameter, 610 mm x 914 mm, plus vertical arm			15.000	17.000	16.000	0.500
108 204-2350	Hand dryer, 1000 watt wall mounted, with electrical connections			5.000	6.000	5.500	1.600
108 204-2600	Hat and coat strip, stainless steel, 4 hook, 914 mm long			30.000	35.000	32.500	0.267
108 204-3000	Mirror with stainless steel frame, 457 mm x 610 mm			20.000	23.000	21.500	0.400



**DIVISION 10 : SPECIALTIES**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E.H.
108 204-3200	Mirror with stainless steel frame, 1220 mm x 610 mm			10.000	12.000	11.000	0.800
108 204-3300	Mirror with stainless steel frame, 1830 mm x 610 mm			6.000	7.000	6.500	1.333
108 204-3500	Mirror with 127 mm stainless steel shelf, 20 mm sq. frame, 457 x 610 mm			20.000	23.000	21.500	0.400
108 204-3700	Mirror with 127 mm stainless steel shelf, 20 mm sq. frame, 1220 x 610 mm			10.000	12.000	11.000	0.800
108 204-3800	Mirror with 127 mm stainless steel shelf, 20 mm sq. frame, 1830 x 610 mm			6.000	7.000	6.500	1.333
108 204-4100	Mop holder strip, stainless steel, 5 holders, 1220 mm long			24.000	26.000	26.000	0.333
108 204-4200	Napkin/tampon dispenser, recessed			17.000	20.000	18.500	0.471
108 204-4300	Robe hook, single, heavy duty, concealed mounting			40.000	46.000	43.000	0.200
108 204-4600	Soap dispenser, chrome, surface mounted, liquid or powder			24.000	26.000	26.000	0.333
108 204-5000	Soap dispenser, Recessed, stainless steel, liquid or powder			12.000	14.000	13.000	0.667
108 204-5300	Soap dispenser tank, stainless steel, 3.6 liter			12.000	14.000	13.000	0.667
108 204-5400	Soap dispenser tank, stainless steel, 20 liter			6.000	7.000	6.500	1.333
108 204-5440	Soap dish chrome, surface mounted			36.000	41.000	38.500	0.222
108 204-5480	Soap dish chrome, recessed			17.000	20.000	18.500	0.471
108 204-5520	Soap dish, with grab bar surface mounted			20.000	23.000	21.500	0.400
108 204-5560	Soap dish, with grab bar recessed			10.000	12.000	11.000	0.800
108 204-5600	Shelf, stainless steel, 127 mm wide, 18 ga., 610 mm long			30.000	35.000	32.500	0.267
108 204-5700	Shelf, stainless steel, 127 mm wide, 18 ga., 1219 mm long	EA	0.125 Labor Foreman 1.000 Carpenter 1.000 Laborer 1.000 Power Tool	20.000	23.000	21.500	0.400
108 204-5800	Shelf, stainless steel, 200 mm wide, 18 ga., 610 mm long			27.000	31.000	29.000	0.296
108 204-5900	Shelf, stainless steel, 200 mm wide, 18 ga., 1220 mm long			20.000	23.000	21.500	0.400
108 204-6000	Toilet seat cover dispenser, stainless steel, recessed			24.000	26.000	26.000	0.333
108 204-6050	Toilet seat cover dispenser, stainless steel, surface mounted			12.000	14.000	13.000	0.667
108 204-6100	Toilet tissue dispenser, surface mounted, stainless steel, single roll			30.000	35.000	32.500	0.267
108 204-6200	Toilet tissue dispenser, surface mounted, stainless steel, double roll			24.000	26.000	26.000	0.333
108 204-6400	Towel bar, stainless steel, 457 mm long			25.000	29.000	27.000	0.320
108 204-6500	Towel bar, stainless steel, 760 mm long			22.000	25.000	23.500	0.364
108 204-6700	Towel dispenser, stainless steel, surface mounted			20.000	23.000	21.500	0.400
108 204-6800	Towel dispenser, stainless steel, flush mounted, recessed			12.000	14.000	13.000	0.667
108 204-7000	Towel holder, hotel type, 2 guest size			22.000	25.000	23.500	0.364
108 204-7200	Towel shelf, stainless steel, 610 mm long, 200 mm wide			22.000	25.000	23.500	0.364
108 204-7400	Tumbler holder			32.000	37.000	34.500	0.250
108 204-7500	Soap, tumbler & toothbrush			32.000	37.000	34.500	0.250
108 204-7700	Wall urn ash receiver, surface mount, 280 mm long			15.000	17.000	16.000	0.533
108 204-8000	Waste receptacles, stainless steel, with top, 50 liter			12.000	14.000	13.000	0.667
108 204-8100	Waste receptacles, stainless steel, with top, 136 liter			10.000	12.000	11.000	0.800
<b>108 208</b>	<b>MEDICINE CABINETS:</b>						
108 208-0010	Medicine Cabinets, With mirror, stainless steel frame, 400 mm x 560 mm, unlighted	EA	0.125 Labor Foreman 3.000 Carpenter 1.000 Laborer 1.000 Power Tool	15.000	17.000	16.000	0.533
108 208-0300	Medicine Cabinets, Sliding mirror doors, 500mm x 400 mm x 120 mm, unlighted			6.000	9.000	8.500	1.000
108 208-0400	Medicine Cabinets, Sliding mirror doors, 600 mm x 480 mm x 210 mm, lighted			6.000	7.000	6.500	1.333
108 208-1200	Medicine Cabinets, Hotel cabinets, stainless, with lower shelf, unlighted			11.000	13.000	12.000	0.727
108 208-1300	Medicine Cabinets, Hotel cabinets, stainless, with lower shelf, lighted			6.000	7.000	6.500	1.333
<b>108 800</b>	<b>SCALES</b>						
<b>108 801</b>	<b>SCALES Built-in floor scale, not incl. foundations</b>						
108 801-0100	Scales, dial type, 4.5 metric ton capacity, 2.4 m x 1.8 m platform	EA	0.125 Labor Foreman 3.000 Carpenter 0.500 Electrician 2.000 Laborer 1.000 Power & Tools Set	0.600	1.000	0.800	13.333
108 801-0300	Scales, dial type, 4.5 metric ton capacity, 2.7 m x 2.1 m platform			0.500	1.000	0.750	16.000
108 801-0600	Scales, dial type, 9 metric ton capacity, steel platform, 2.7 m x 2.1 m platform			0.400	0.500	0.450	20.000
108 801-0700	Truck scales, included steel weigh bridge, dial type, mech., 7 m x 3 m platform, 18 metric ton capacity			0.350	1.000	0.675	22.857
108 801-1100	Truck scales, included steel weigh bridge, dial type, mech., 15 m x 3 m platform, 45 metric ton capacity			0.150	0.500	0.325	53.333

# **DIVISION 10 : SPECIALTIES**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E.H.
108 801-1400	Truck scales, included steel weigh bridge, dial type, mech., 21 m x 3 m platform, 54 metric ton capacity			0.125	0.500	0.313	64.000
108 801-1640	Truck digital electronic scale, 90 metric ton capacity, 18 m x 3 m platform			0.150	0.500	0.325	53.333
108 801-2300	Concrete foundation pits for scale platform, 2.4 m x 1.8 m, 3.62 m <sup>3</sup> required.		0.125 Labor Foreman 3.000 Carpenters 1.000 Steel fixer 2.000 Laborers 0.125 Equipment Operator 1.000 Power Tools 1.000 Excavator	0.650	1.000	0.825	24.615
108 801-2600	Concrete foundation pits for scale platform, 15 m x 3 m, 22.92 m <sup>3</sup> required.			0.220	0.500	0.360	72.727
108 801-2700	Concrete foundation pits for scale platform, 21 m x 3 m, 30.56 m <sup>3</sup> required.			0.160	0.400	0.260	100.000
108 801-2900	Low profile electronic warehouse scale, not incl. printer, 1.2 m x 1.2 m platform, 4536 kg capacity		0.125 Labor Foreman 2.000 Carpenters 1.000 Laborer 1.000 Power Tool	0.300	0.500	0.400	26.667
108 801-3400	Low profile electronic warehouse scale, not incl. printer, 1.5 m x 2.1 m platform, 10 metric ton capacity			0.250	0.500	0.375	32.000
<b>109 WARDROBE &amp; CLOSET SPECIALTIES</b>							
<b>109 010 COAT RACKS / WARDROBES</b>							
<b>109 011 COAT RACKS &amp; WARDROBES</b>							
109 011-1400	Utility hook strips, 10 mm x 64 mm x 860 mm long, 12 hooks	EA	0.125 Labor Foreman 1.000 Carpenter 1.000 Laborer 1.000 Power Tool	55.000	63.000	59.000	0.145
109 011-1850	Wall mounted racks, 16 gauge steel frame, 22 gauge shelves, 300 mm x 380 mm x 0.66 m, 6 hangers			36.000	41.000	38.500	0.222
109 011-2000	Wall mounted racks, 16 gauge steel frame, 22 gauge shelves, 300 mm x 380 mm x 1.3 m, 12 hangers			36.000	41.000	38.500	11.520



A decorative geometric pattern, likely a traditional Islamic or Arabesque design, is located in the top right corner of the page. It features a complex, repeating lattice of lines forming various polygons and star-like shapes, rendered in a light gray color against a darker background.

# Division 11

## Equipment

## **Division 11.. Equipment..**

### **Estimating Tips:**

#### **General**

Many of these items are purchased by the owner for installation by the contractor.

Check the specifications for responsibilities, and include time for receiving, installation, mechanical and electrical hook-ups in the appropriate division. Many items in Division 11 require some type of support system that is not usually furnished with the item.

Example of these systems include blocking for the attachment casework and support angles for ceiling hung projection screens.

Some items may require assembly. Verify the amount of assembly required to the need for a hard electrical connection and add the appropriate costs.



# **DIVISION 11: EQUIPMENT**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX	D. O. AVRG.	AVRG. E. H.
<b>110</b>	<b>EQUIPMENT</b>						
<b>110 050</b>	<b>CONTRACTOR EQUIPMENT</b>						
<b>110 051</b>	<b>CONTRACTOR EQUIPMENT</b> See division 016						
<b>110 100</b>	<b>MAINTENANCE EQUIPMENT</b>						
<b>110 121</b>	<b>VACUUM CLEANING:</b>						
110 121-0010	Vacuum Cleaning, Central, 3 inlet system, residential	SYSTEM	0.125 Skilled Foreman 1.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	1.350	2.000		5.926
110 121-0800	Vacuum Cleaning, Central, 9 inlet system, residential	"	"	0.550	1.000		14.545
<b>110 200</b>	<b>SECURITY / VAULT EQUIP.</b>						
<b>110 261</b>	<b>SAFE:</b>						
110 261-0100	Safe for offices 4 hours rating 1.5 m x 0.8 m x 0.5 m including handling into building	EA	0.125 Labor Foreman 3.000 Common Laborers 1.000 Truck Driver 1.000 Pickup	1.500	2.000	1.750	5.333
110 261-0300	Safe for offices 1 hours rating 1.5 m x 0.8 m x 0.5 m double door, including handling into building			1.500	2.000	1.750	5.333
110 261-0550	Safe, office data, 4 hours rating 1.8 m x 0.9 m x 1.4 m including handling into building			0.900	1.000	0.950	8.889
110 261-0800	Safe, money, 1 hour fire rated 0.23 m x 0.36 m x 0.36 m including handling into building			6.000	7.000	6.500	1.333
110 261-1200	Safe, jeweler, 1.6 m x 0.6 m x 0.45 m including handling into building	↓	↓	1.500	2.000	1.750	5.333
<b>110 300</b>	<b>TELLER &amp; SERVICE EQUIPMENT</b>						
<b>110 301</b>	<b>BANK EQUIPMENT:</b>						
110 301-0100	Alarm system for police with vault alarm	EA	0.125 Skilled Foreman 2.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	0.400	1.000	0.700	20.000
110 301-0500	Bullet resistant teller window, 1.2 m x 1.5 m	"	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 1.000 Power Tool	1.000	1.000	1.000	8.000
110 301-3100	Bank counter, complete with steel undercounter	STATION	0.125 Skilled Foreman 2.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	0.500	1.000	0.750	16.000
110 301-4600	Bank door and frame, bullet-resistant, with vision panel, average	EA		1.000	1.000	1.000	8.000
110 301-4800	Bank drive-up window, complete w/motorized drawer, mike & bullet resistant glass 600 mm wide, 800 mm high for 1 teller.			0.750	1.000	0.875	10.667
110 301-5000	Bank night depository door, with whole chest average	↓		0.650	1.000	0.825	12.308
110 301-5200	Bank night depository door, envelop only	↓		5.000	6.000	5.500	1.600
110 301-5400	Bank partitions, bullet-resistant, 30 mm glass, 2.4 m high	LM		1.500	2.000	1.750	5.333
110 301-5500	Bank pneumatic tube systems, 2 lane drive-up, complete system	TOTAL		0.300	0.500	0.400	26.667
110 301-5550	Bank pneumatic tube systems, 2 lane drive-up, with T.V. viewer	"	↓	0.250	0.500	0.375	32.000
110 301-5580	Bank safety deposit boxes, 16 modular openings, each 250 mm x 380 mm including base and top canopy units, average.	OPENING	0.125 Skilled Foreman 1.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	5.000	6.000	5.500	1.600
110 301-5590	Bank teller locker, average	"	"	10.000	12.000	11.000	0.800
110 301-5600	Bank pass thru, bullet-resist. window, painted steel, 610 mm x 910 mm	EA	0.125 Skilled Foreman 2.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	1.750	2.000	1.875	4.571
110 301-5700	Bank pass thru, bullet-resist. window, painted steel, 1200 mm x 1200 mm			1.250	1.000	1.125	6.400
110 301-5800	Bank pass thru, bullet-resist. window, painted steel, 1800 mm x 1000 mm			1.000	1.000	1.000	8.000
110 301-6000	Bank surveillance system, including 3 cameras 16 mm film, complete			1.250	1.000	1.125	6.400
110 301-6010	Bank surveillance system, 16 mm film camera, add for any added camera			5.000	6.000	5.500	1.600
110 301-6100	Bank surveillance system, video camera, complete			1.000	1.000	1.000	8.000
110 301-6200	Bank twenty four (24) hour teller, single unit, automated, deposit, cash and memo.			0.250	0.500	0.375	32.000
110 301-7000	Bank Vault door and frame, 1980 mm x 810 mm x 250 mm thick single, 10 bolt, 4 hours rating.			3.000	3.000	3.000	2.667
110 301-7000	Bank Vault door and frame, 1980 mm x 810 mm x 250 mm thick single, 10 bolt, 6 hours rating.			3.000	3.000	3.000	2.667
110 301-7000	Bank Vault door and frame, 1980 mm x 810 mm x 250 mm thick single, 18 bolt, 4 hours rating.	↓	↓	1.500	2.000	1.750	5.333
<b>110 400</b>	<b>ECCELESIASTICAL EQUIPMENT</b>						
<b>110 401</b>	<b>MOSQUE EQUIPMENT:</b>						

# DIVISION 11: EQUIPMENT

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
110 401-0050	Book shelve unit, hardwood, 1.0 m high, 1 m long, 300 mm wide, including handling, shelves at 300 mm O.C.	EA	0.125 Skilled Foreman 1.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	20.000	23.000	21.500	0.400
110 401-0100	Chandelier, crystal, 3 meter diameter, with winch.	EA	0.125 Skilled Foreman 2.000 Skilled Workers 4.000 Common Laborer 1.000 Tools Set 1.000 Chain Hoist 1.000 Special Scaffolding	1.000	1.000	1.000	24.000
110 401-0200	Mihrab, arched, 2.5 m high, 1.5 m wide, oak veneer casement including furring	-	0.125 Skilled Foreman 2.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	0.500	1.000	0.750	16.000
110 401-0500	Minbar, wood, prefabricated, w/6 riser stair and built-in microphone			1.000	1.000	1.000	0.000
110 401-0600	Minbar, wood, deluxe, prefabricated, w/10 riser, solid cherry, and built-in microphone			1.000	1.000	1.000	0.000
110 401-0700	Minbar, railing, hardwood, average	LM	0.125 Skilled Foreman 1.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	12.000	14.000	13.000	0.657
110 401-1000	Minaret crescent bronze upto 2 m high	EA	0.125 Skilled Foreman 1.000 Skilled Workers 2.000 Common Laborer 1.000 Power Tool	2.000	2.000	2.000	4.000
110 401-1100	Minaret crescent bronze more than 2 m high			1.000	1.000	1.000	8.000
110 401-2000	Sound system equipment, rack with amplifier, tape recorder and 4 minaret loud speakers		0.125 Skilled Foreman 1.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	1.500	2.000	1.750	5.333
110 401-3000	Shoe rack, capacity 100 shoes, including handling		0.125 Labor Foreman 1.000 Painter 4.000 Common Laborers 1.000 Consumable Tools	6.000	7.000	6.500	1.333
110 401-4000	Stained glass moderate art work	SQM	0.125 Skilled Foreman 1.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	4.000	5.000	4.500	2.000
110 401-4100	Small pieces colored glass, patterned	-	-	6.000	7.000	6.500	1.333
<b>110 500</b>	<b>LIBRARY EQUIPMENT</b>						
<b>110 501</b>	<b>LIBRARY EQUIPMENT:</b>						
110 501-0010	Library equipment, Book shelf, metal, 2.3 m high, 250 mm shelf, double face	LM	0.125 Skilled Foreman 1.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	5.000	6.000	5.500	1.600
110 501-0300	Library equipment, Bookshelf, metal, 2.3 m high, 250 mm shelf, single face			5.000	6.000	5.500	1.600
110 501-0700	Library equipment, Book shelf, metal, 2.3 m high, 300 mm shelf, double face			5.000	6.000	5.500	1.600
110 501-1100	Magazine shelving, 2.2 m high, 300 mm deep			5.000	6.000	5.500	1.600
110 501-2500	Carrels, hardwood, 910 mm x 610 mm, average	EA		10.000	12.000	11.000	0.800
110 501-3500	Charging desk, built-in, with counter, plastic laminated top	LM		4.000	5.000	4.500	2.000
110 501-3800	Steel mobile compacting shelving, 2.7 meter high, 900 m wide, hand crank.	EA		1.500	2.000	1.750	5.333
110 501-3820	Steel mobile compacting shelving, 2.7 m high, 900 mm wide, motor operated.	-		1.000	1.000	1.000	8.000
<b>110 600</b>	<b>THEATRE / STAGE EQUIPMENT</b>						
<b>110 601</b>	<b>STAGE EQUIPMENT:</b>						
110 601-0100	Control boards with 20 dimmers & breakers, average	EA	0.125 Skilled Foreman 1.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	0.600	1.000	0.800	13.333
110 601-0500	Curtain track, straight, light duty, less than 8 meters	LM		7.000	8.000	7.500	1.143
110 601-0520	Curtain track, straight, light duty, more than 12 meters			8.000	9.000	8.500	1.000
110 601-0540	Curtain track, straight, medium duty, more than 12 meters.			7.000	8.000	7.500	1.143
110 601-0600	Curtain track, straight, heavy duty, more than 12 meters.			5.000	6.000	5.500	1.600
110 601-0700	Curtain track, curved section.			3.500	4.000	3.750	2.286
110 601-0800	Curtain track, add for curtain drawing, motor operation upto 3/4 HP, no wiring included per track.	EA		5.000	6.000	5.500	1.600
110 601-0820	Curtain track, add for curtain lifting equipment, motor operation upto 3/4 HP, no wiring included per track	-		5.000	6.000	5.500	1.600
110 601-1000	Curtains, velour, medium weight	SQM		40.000	46.000	43.000	0.200
110 601-1150	Curtains, silica based yarn, fireproof	-		4.500	5.000	4.750	1.778
110 601-2000	Stage Lights, border, quartz, reflector, vented, colored or white	LM		8.000	9.000	8.500	1.143
110 601-2500	Stage Spotlight, follow spot, with transformer, 2000 W	EA		5.000	6.000	5.500	1.600
110 601-3000	Stage Light Stationary spot, fresnel quartz, 200 mm lens			6.000	7.000	6.500	1.333



# **DIVISION 11: EQUIPMENT**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
110 601-3500	Stage Light Ellipsoidal quartz, 1,000 W, 300 mm lens			6.000	7.000	6.500	1.333
110 601-4000	Stage Light Strobe, quartz up to 15 flashes.			4.000	5.000	4.500	2.000
110 601-6000	Stage Telescoping platforms, extruded alum., straight, average	SQM Sfg	0.125 Skilled Foreman 2.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	8.000	9.000	8.500	1.000
110 601-8000	Rule of thumb: total stage equipment, average	SQM Sfg	0.125 Skilled Foreman 2.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	5.000	6.000	5.500	1.600
<b>110 604 MOVIE EQUIPMENT:</b>							
110 604-2600	Movie projector, 35 mm with pedestal, average	EA	0.125 Skilled Foreman 1.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	6.000	7.000	6.500	1.333
110 604-3000	Projection screens, rigid, in wall, acrylic, 6 mm thick	SQM	0.125 Skilled Foreman 2.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	24.000	28.000	26.000	0.333
110 604-3100	Projection screens, rigid, in wall, acrylic, 13 mm thick	SQM		17.000	20.000	18.500	0.471
110 604-3300	Projection screens, electric operated, heavy duty, 37 SQM	EA		1.000	1.000	1.000	8.000
110 604-3320	Theatre projection screens, matte white, including frames	SQM		26.000	30.000	28.000	0.308
110 604-3700	Sound systems rack unit, incl. amplifier, single system, average	EA	0.125 Skilled Foreman 1.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	1.500	2.000	1.750	5.333
110 604-3800	Sound systems, rack unit, including amplifier, dolby/super sound, average			0.750	1.000	0.875	10.667
110 604-5300	Sound Speakers, recessed behind screen, average			2.500	3.000	2.750	3.200
110 604-5700	Theatre Seating, painted steel, upholstered		0.125 Skilled Foreman 2.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	32.000	37.000	34.500	0.250
110 604-5800	Theatre Seating, deluxe, provided sound outlets.			8.000	9.000	8.500	1.000
<b>111 020 BARBER SHOP EQUIPMENT</b>							
<b>111 021 BARBER EQUIPMENT:</b>							
111 021-0050	Chair, hydraulic, movable, average	EA	0.125 Skilled Foreman 1.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	30.000	35.000	32.500	0.287
111 021-0200	Wall hung styling station with mirrors, average			5.000	6.000	5.500	1.600
111 021-0500	Barber Sink, hair washing basin, rough plumbing not incl.			5.000	6.000	5.500	1.600
111 021-1100	Total equipment, rule of thumb, per chair, average			2.000	2.000	2.000	4.000
<b>111 040 CASH REGISTER / CHECKING</b>							
<b>111 041 CHECKOUT COUNTER:</b>							
111 041-0010	Checkout Counter, Supermarket conveyor, single belt	EA	0.125 Skilled Foreman 1.000 Skilled Workers 2.000 Common Laborer 1.000 Power Tool	10.000	12.000	11.000	0.800
111 041-0100	Checkout Counter, Supermarket conveyor, double belt, power take-away			9.000	10.000	9.500	0.889
111 041-0400	Checkout Counter, Supermarket conveyor, double belt, power take-away, incl. side scanning			8.000	9.000	8.500	1.000
111 041-0800	Warehouse or bulk type conveyor belt			7.000	8.000	7.500	1.143
111 041-1000	Scanning system 2 lanes with 10 registers computerized, including scales			0.500	1.000	0.750	16.000
111 041-2000	Register, cashier, average			15.000	17.000	16.000	0.533
<b>111 050 DISPLAY CASES</b>							
<b>111 051 REFRIGERATED FOOD CASES:</b>							
111 051-0400	Freezer, self contained, chest type, 0.84 m3	EA	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 1.000 Power Tools	3.000	3.000	3.000	2.667
111 051-0500	Freezer, self contained, upright, glass door, 2.18 m3			2.500	3.000	2.750	3.200
111 051-0600	Frozen food, chest type 3.6 m long			2.500	3.000	2.750	3.200
111 051-0800	Frozen food, island case, 3.6 m long, single deck			2.500	3.000	2.750	3.200
111 051-0900	Frozen food, island case, 3.6 m long, double deck			2.250	3.000	2.625	3.556
<b>111 100 LAUNDRY / DRY CLEANING</b>							
<b>111 101 LAUNDRY EQUIPMENT:</b>							

# DIVISION 11: EQUIPMENT

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
111 101-2000	Dry cleaners, electric, 9 kg capacity	EA	0.125 Skilled Foreman 2.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	0.300	0.500	0.400	26.667
111 101-2050	Dry cleaners, electric, 12 kg capacity			0.250	0.500	0.375	32.000
111 101-2100	Dry cleaners, electric, 14 kg capacity			0.220	0.500	0.360	36.364
111 101-2150	Dry cleaners, electric, 27 kg capacity			0.150	0.500	0.325	53.333
111 101-3600	Folders, blankets & sheets			0.400	1.000	0.700	20.000
111 101-3700	Folders, king size, with automatic stacker			0.250	0.500	0.375	32.000
111 101-4500	Ironers, institutional, 2.8 m, single roll			0.400	1.000	0.700	20.000
111 101-5000	Washers, residential, 4 cycle, average	EA	0.125 Skilled Foreman 1.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	6.000	9.000	8.500	1.000
111 101-6000	Combination washer/extractor, 9 kg capacity			1.500	2.000	1.750	5.333
111 101-6100	Combination washer/extractor, 14 kg capacity			0.750	1.000	0.875	10.667
111 101-6200	Combination washer/extractor, 23 kg capacity			0.650	1.000	0.825	12.308
111 101-6300	Combination washer/extractor, 34 kg capacity			0.300	0.500	0.400	26.667
111 101-6350	Combination washer/extractor, 57 kg capacity			0.150	0.500	0.325	53.333
111 101-7000	Central Laundry conveyor rack rail for moving bags complete w/ scale & motor	LM	1.000 Skilled Foreman 3.000 Skilled Workers 2.000 Common Laborers 1.000 Power Tools 1.000 Tools Set	3.000	3.000	3.000	5.333
<b>111 320</b>	<b>PROJECTION SCREENS</b>						
<b>111 321</b>	<b>PROJECTION SCREENS:</b>						
111 321-0100	Projection screens, wall or ceiling hung, glass beaded, manually operated, average	SQM	0.125 Skilled Foreman 2.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	32.000	37.000	34.500	0.250
111 321-0600	Projection screens, electric operated, glass beaded, 2.5 SQM	EA		5.000	6.000	5.500	1.600
111 321-0900	Projection screens, electric operated, glass beaded, 4.5 SQM			3.000	3.000	3.000	2.667
111 321-1200	Projection screens, heavy duty, electric operated, 18 SQM			1.500	2.000	1.750	5.333
111 321-1300	Projection screens, heavy duty, electric operated, 37 SQM			1.000	1.000	1.000	8.000
111 321-1500	Projection screens, rigid acrylic in wall, for rear projection, 6 mm thick	SQM		24.000	28.000	26.000	0.333
111 321-1600	Projection screens, rigid acrylic in wall, for rear projection, 13 mm thick (maximum size 3m x 6m)			17.000	20.000	18.500	0.471
<b>111 400</b>	<b>SERVICE STATION EQUIPMENT</b>						
<b>111 401</b>	<b>AUTOMOTIVE:</b>						
111 401-0010	Air compressors, electric, 2 HP, standard controls or dual controls	EA	0.125 Skilled Foreman 2.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	3.250	4.000	3.625	2.462
111 401-0600	Air compressors, electric, 5 HP, 110/220 V, standard controls or dual controls			3.000	3.000	3.000	2.667
111 401-0600	Air hose assembly, 15 meter, heavy duty, complete with filter and quick disconnect			4.000	5.000	4.500	2.000
111 401-0700	Air operated pump for hose reels, w/200 liter drum			12.000	14.000	13.000	0.667
111 401-1100	Diesel/Gasoline dispenser, 170 Liter per minute, complete with connections			4.500	5.000	4.750	1.778
111 401-2200	Diesel/Gasoline dispenser, 55 liter per minute, complete with connections, single hose, not including piping of pit box			0.350	0.500	0.425	22.857
111 401-2400	Hoists, single post, fully hydraulic, 3600 kg, capacity, swivel arms			0.200	0.500	0.350	40.000
111 401-2500	Hoists, two posts, fully hydraulic, adjustable frames, 5000 kg capacity			0.100	0.500	0.300	80.000
111 401-2800	Hoists two posts, fully hydraulic, adjustable frames, 11000 kg capacity, frame supports			0.200	0.500	0.350	40.000
111 401-2820	Hoists, two posts, pneumatic, 5000 kg capacity			0.100	0.400	0.250	80.000
111 401-3000	Hoists, two posts, pneumatic, 11000 kg capacity	SET		0.400	1.000	0.700	20.000
111 401-3200	Oil pump air operated, 54 Kg drum	EA		12.000	14.000	13.000	0.667
111 401-4200	Paint spray booth, 3.0 m x 2.95 m x 3.25 m high, 220 V/3 phase/ 60 Hz.			0.400	1.000	0.700	20.000
111 401-4400	Tire changer pneumatic			2.700	3.500	2.875	2.500
111 401-4600	Tire changer, hydraulic, for truck tire			1.500	2.000	1.750	5.333
111 401-4000	Underground exhaust fume system, per station			2.000	2.000	2.000	4.000
<b>111 500</b>	<b>PARKING CONTROL EQUIPMENT</b>						



# **DIVISION 11: EQUIPMENT**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX	D. O. AVRG.	AVRG. E. H.
<b>111 501</b>	<b>PARKING EQUIPMENT:</b>						
111 501-0010	Parking equipment, traffic detectors, magnetic	EA	0.125 Skilled Foreman 2.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	4.000	5.000	4.500	2.000
111 501-0500	Parking equipment, automatic gate 2.4 m long arm one way			1.750	2.000	1.875	4.571
111 501-0650	Parking equipment, automatic gate 2.4 m long arm two way			1.750	2.000	1.875	4.571
111 501-1050	Parking equipment, booth for attendant, average			2.000	2.000	2.000	4.000
111 501-1400	Parking equipment, fee indicator, 25 mm display			6.000	7.000	6.500	1.333
111 501-3500	Parking equipment, ticket printer and dispenser			2.000	2.000	2.000	4.000
111 501-4000	Parking equipment, card control station			6.000	7.000	6.500	1.333
<b>111 600</b>	<b>LOADING DOCK EQUIPMENT</b>						
<b>111 601</b>	<b>LOADING DOCK:</b>						
111 601-0010	Loading dock, bumpers rubber blocks 114 mm thick, 250 mm high, 350 mm long	EA	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Power Tool	15.000	17.000	16.000	0.533
111 601-0300	Loading dock, bumpers rubber blocks 114 mm thick, 250 mm high, 910 mm long			10.000	12.000	11.000	0.800
111 601-0500	Loading dock, bumpers rubber blocks 114 mm thick, 300 mm high, 350 mm long			14.000	16.000	15.000	0.571
111 601-0550	Loading dock, bumpers rubber blocks 114 mm thick, 300 mm high, 610 mm long			11.000	13.000	12.000	0.727
111 601-0800	Loading dock, bumpers rubber blocks 114 mm thick, 300 mm high, 910 mm long			9.000	10.000	9.500	0.889
111 601-0800	Loading dock, bumpers rubber blocks 150 mm thick, 250 mm high, 356 mm long			12.750	15.000	13.875	0.827
111 601-0850	Loading dock, bumpers rubber blocks 150 mm thick, 250 mm high, 610 mm long			10.500	12.000	11.250	0.762
111 601-0900	Loading dock, bumpers rubber blocks 150 mm thick, 250 mm high, 910 mm long			8.000	9.000	8.500	1.000
111 601-0910	Loading dock, bumpers rubber blocks 150 mm thick, 500 mm high, 280 mm long			7.500	9.000	8.250	1.067
111 601-0920	Loading dock, extruded rubber bumpers, T section, 560 mm x 560 mm x 76 mm			22.000	25.000	23.500	0.364
111 601-0940	Loading dock, molded rubber bumpers, T section, 610 mm x 300 mm x 76 mm			11.000	13.000	12.000	0.727
111 601-2200	Dock lifter, 2200 Kg capacity, 1.5 m x 1.5 m aluminium platform		0.125 Skilled Foreman 2.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	2.000	2.000	2.000	4.000
111 601-2700	Dock lifter, 4000 Kg capacity, 1.5 m x 1.5 m aluminium platform			2.000	2.000	2.000	4.000
111 601-3200	Dock lifter, 6000 Kg capacity, 1.5 m x 1.5 m aluminium platform			2.000	2.000	2.000	4.000
111 601-4400	Dock lifter, 2200 kg capacity, fixed with 1.8 m x 2.4 m platform		0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 1.000 Gas Welding M/C	0.6	1.000	1.000	13.333
111 601-4500	Loading dock, levelers, hinged for trucks 10 ton capacity, 1.8 m x 2.4 m			1.000	1.000	1.000	8.000
111 601-4700	Loading dock, levelers, hydraulic for trucks 10 ton capacity, 2.1 m x 2.4 m			1.000	1.000	1.000	8.000
111 601-5000	Loading docks light single or double arm upto 1.5 m long		0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 1.000 Power Tool	3.000	3.000	3.000	2.667
<b>111 700</b>	<b>WASTE HANDLING EQUIPMENT</b>						
111 700-0010	Waste handling, compactors, 120V, 110 kg/hr, chute fed	EA	0.125 Skilled Foreman 2.000 Skilled workers 1.000 Common Laborer 1.000 Power Tool	0.850	1.000	0.925	9.412
111 700-0100	Waste handling, compactors, 120V, 110 kg/hr, hand fed			2.000	2.000	2.000	4.000
111 700-1000	Heavy duty industrial compactor, upto 2 CUM capacity			0.400	1.000	0.700	20.000
111 700-1150	Heavy duty industrial compactor, upto 4 CUM capacity			0.400	1.000	0.700	20.000
111 700-1200	Combination shredder / compactor 2200 kg/hr.			0.400	1.000	0.700	20.000
111 700-3750	Incinerator, electric, 45 kg/hour, average		1.000 Skilled Foreman 2.000 Skilled Workers 0.250 Equipment Operator 3.000 Common Laborers 0.250 Crane 11 Ton 1.000 Tool Set	0.600	1.000	0.800	16.667
111 700-4000	Incinerator, electric, 180 kg/hour, average			0.550	1.000	0.775	18.182
111 700-4250	Incinerator, electric, 450 kg/hour, average			0.230	0.500	0.365	43.478
111 700-4400	Incinerator, Gas, chimney not included, 23 kg/hour, average			0.600	1.000	0.800	16.667
111 700-4500	Incinerator, Gas, chimney not included, 180 kg/hour, average			0.230	0.500	0.365	43.478
111 700-4600	Incinerator, Gas, chimney not included, 180 kg/hour, with heat recovery system, average			0.100	0.500	0.300	100.000
<b>111 900</b>	<b>DETENTION EQUIPMENT</b>						



# **DIVISION 11: EQUIPMENT**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
<b>111 901</b>	<b>DETENTION EQUIPMENT</b>						
111 901-0500	Bar front, rolling, 22 mm bars, 100 mm O.C., 2.1 m high, 1.5 m wide, with hardware	EA	0.125 Skilled Foreman 3.000 Skilled Workers 2.000 Common Laborer 1.000 Gas Welding M/C 1.000 Power Tools	1.750	2.000	1.875	9.143
111 901-1000	Detention, doors and frames, 915 x 2.1 m, complete, w/hardware			3.500	4.000	3.750	4.571
111 901-2000	Detention, cells, prefab., 1.5 to 2 m wide, 2 to 2.5 m high, 2 to 2.5 m deep bar front, not incl. plumbing			1.250	1.000	1.125	12.800
111 901-4000	Detention, visitor cubicle, vision panel, no intercom			1.000	1.000	1.000	16.000
<b>114</b>	<b>FOOD SERVICE, RESIDENTIAL, DARKROOM, ATHLETIC EQUIPMENT</b>						
<b>114 000</b>	<b>FOOD SERVICE EQUIPMENT</b>						
<b>114 002</b>	<b>APPLIANCES</b>						
114 002-0050	Cooking range, 760 mm free standing, 1 oven, average	EA	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Worker 1.000 Tools Set	9.000	10.000	9.500	0.889
114 002-0150	Cooking range, 760 mm free standing, 2 oven, average			9.000	10.000	9.500	0.889
114 002-0350	Cooking range, built-in, 760 mm wide, 1 oven, average		0.125 Skilled Foreman 2.000 Skilled Workers 1.000 Common Laborer 1.000 Tools Set	3.000	3.000	3.000	2.667
114 002-0700	Cooking range, free standing, 530 mm wide range, 1 oven, average	EA	0.125 Skilled Foreman 1.000 Skilled worker 1.000 Common Laborer 1.000 Tools Set	9.000	10.000	9.500	0.889
114 002-0900	Counter top cook tops, 4 burner, standard, average			7.000	8.000	7.500	1.143
114 002-1250	Microwave oven, average			7.000	8.000	7.500	1.143
114 002-1570	Combination range, refrigerator and sink 1.5 m wide, average		0.125 Skilled Foreman 2.000 Skilled Workers 1.000 Common Laborer 1.000 Tools Set	2.000	2.000	2.000	4.000
114 002-1590	Combination range, refrigerator and sink 1.8 m wide, average			1.250	1.000	1.125	6.400
114 002-1600	Combination range, refrigerator and sink, 1.2 m wide, office, average			2.000	2.000	2.000	4.000
114 002-1620	Combination refrigerator and sink only, office model			2.500	3.000	2.750	3.200
114 002-1750	Compactor, residential, average			4.500	5.000	4.750	1.778
114 002-2000	Deep freeze, 0.4 to 0.6 CUM, average		0.125 Skilled Foreman 1.000 Skilled worker 1.000 Common Laborer 1.000 Tools Set	9.000	10.000	9.500	0.889
114 002-2200	Deep freeze, 0.84 CUM, average			7.000	8.000	7.500	1.143
114 002-2750	Dishwasher, built-in, average			5.000	6.000	5.500	1.600
114 002-3200	Dryer, automatic, average			7.000	8.000	7.500	1.143
114 002-3300	Garbage disposer, sink type, average			4.000	5.000	4.500	2.000
114 002-3550	Heater, electric, built-in, 1250 W, ceiling type, average			6.000	7.000	6.500	1.333
114 002-3700	Heater, electric, built-in, 1250 W, wall type, average			6.000	7.000	6.500	1.333
114 002-3950	Heater, electric, built-in, 3000 W, wall type with blower, average			6.000	7.000	6.500	1.333
114 002-4150	Hood for range, 2 speed, vented, 1m wide, average		0.125 Skilled Foreman 2.000 Skilled Workers 1.000 Common Laborer 1.000 Tools Set	6.000	7.000	6.500	1.333
114 002-5200	Icemaker, automatic, 9 kg/day		0.125 Skilled Foreman 1.000 Skilled worker 1.000 Common Laborer 1.000 Tools Set	9.000	10.000	9.500	0.889
114 002-5350	Icemaker, automatic, 23 kg/day			3.000	3.000	3.000	2.667
114 002-5500	Refrigerator, no frost, 0.28 CUM to 0.34 CUM, average			9.000	10.000	9.500	0.889
114 002-5950	Refrigerator, no frost, 0.50 CUM to 0.56 CUM, average			8.000	9.000	8.500	1.000
114 002-6150	Refrigerator, no frost, 0.59 CUM to 0.8 CUM, average			7.000	8.000	7.500	1.143
114 002-6400	Sump pump cellar drainer, 250 W, average			1.000	1.000	1.000	8.000
114 002-6650	Washing machine, automatic, average			8.000	9.000	8.500	1.000
114 002-6900	Water heater, electric, 100 liter, average			5.000	6.000	5.500	1.600
114 002-7100	Water heater, electric, 300 liter, average			2.000	2.000	2.000	4.000
114 002-7350	Water softener, automatic, to 8 grains/L			4.000	5.000	4.500	1.333
114 002-7400	Water softener, automatic, to 26 grains/L			3.000	3.000	3.000	2.667
114 002-7450	Vent kits for dryers			9.000	10.000	9.500	0.889



# **DIVISION 11: EQUIPMENT**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX	D. O. AVRG.	AVRG. E. H.
<b>114 004</b>	<b>KITCHEN EQUIPMENT:</b>						
114 004-0010	Bake oven gas, one section	EA	0.125 Skilled Foreman 1.000 Skilled worker 1.000 Common Laborer 1.000 Tools Set	7.000	8.000	7.500	1.143
114 004-0300	Bake oven gas, two section			6.000	7.000	6.500	1.333
114 004-0600	Bake oven gas, three section			5.000	6.000	5.500	1.600
114 004-1300	Broiler without oven, standard.			5.000	6.000	5.500	1.600
114 004-1550	Broiler without oven, infra-red.		0.125 Skilled Foreman 2.000 Skilled worker 1.000 Common Laborer 1.000 Power Toolst.	3.000	3.000	3.000	2.667
114 004-1580	Bain Marie gas or steam, 1.8 meter			6.000	7.000	6.500	1.333
114 004-1850	Coffee urns, twin, 22 Liter		0.125 Skilled Foreman 1.000 Skilled worker 1.000 Common Laborer 1.000 Tools Set	16.000	18.000	17.000	0.500
114 004-1860	Coffee urns, twin, 76 Liter			7.000	8.000	7.500	1.143
114 004-2350	Cooler, beverage, 1.8 m long			5.000	6.000	5.500	1.600
114 004-2700	Dishwasher, commercial, rack type, 10 to 12 rack/hr.			2.000	2.000	2.000	4.000
114 004-2750	Dishwasher, semi-automatic 38 to 50 racks/hour			1.000	1.000	1.000	8.000
114 004-2800	Dishwasher, automatic 190 to 230 racks/hour	EA	0.125 Skilled Foreman 2.000 Skilled worker 1.000 Common Laborer 1.000 Tools Set	0.600	1.000	0.800	13.333
114 004-2840	Dishwasher, automatic 8,750 to 12,500 dishes/hour			0.150	0.500	0.325	53.333
114 004-3800	Food mixers, 18 liter			6.000	7.000	6.500	1.333
114 004-4000	Food mixers, 56 liter			4.000	5.000	4.500	2.000
114 004-4300	Freezers, reach-in 1.90 CUM		0.125 Skilled Foreman 1.000 Skilled Workers 1.000 Common Laborer 1.000 Tools Set	2.500	3.000	2.750	3.200
114 004-4750	Fryer, with twin baskets, modular model			6.000	7.000	6.500	1.333
114 004-5000	Fryer, floor model, on 152 mm legs			4.000	5.000	4.500	2.000
114 004-5550	Griddle, 1.2 m long			5.000	6.000	5.500	1.600
114 004-5800	Ice cube maker, 25 kg/day			3.000	3.000	3.000	2.667
114 004-6050	Ice cube maker, 230 kg/day			1.000	1.000	1.000	6.000
114 004-6350	Kettles, steam jacketed, 75 liter		0.125 Skilled Foreman 2.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tools	5.000	6.000	5.500	1.600
114 004-6600	Kettles, steam jacketed, 230 liter			4.000	5.000	4.500	2.000
114 004-6700	Peelers, vegetables, large, capacity 23 kg			5.000	6.000	5.500	1.600
114 004-6760	Pot washer, small			4.000	5.000	4.500	2.000
114 004-6770	Pot washer, large			3.000	3.000	3.000	2.667
114 004-6900	Range, restaurant type, 6 burners and 1 standard oven, 910 mm W		0.125 Skilled Foreman 1.000 Skilled Workers 1.000 Common Workers 1.000 Tools Set	6.000	7.000	6.500	1.333
114 004-7450	Range, restaurant type, heavy duty, single 860 mm convention oven.			4.000	5.000	4.500	2.000
114 004-7950	Range, restaurant type, hood fire protection system, average			2.000	2.000	2.000	4.000
114 004-8000	Shield stainless steel wall mounted	SQM		6.500	7.000	6.750	1.231
114 004-8800	Service counter, stainless steel, straight section, 600 mm wide	LM		21.000	24.000	22.500	0.381
114 004-8820	Service counter, stainless steel, curved section, 600 mm wide	"		16.000	18.000	17.000	0.500
114 004-8830	Soft drinks dispenser, 4 spout, 1 remote	EA		0.450	1.000	0.725	17.778
114 004-8850	Steamer, electric 27 kW	"	0.125 Skilled Foreman 2.000 Skilled Workers 1.000 Common Workers 1.000 Power Tool	6.000	7.000	6.500	1.333
<b>114 580</b>	<b>DISAPPEARING STAIRS</b>						
<b>114 581</b>	<b>DISAPPEARING STAIRWAY:</b>						
114 581-0100	Disappearing stairway without trim, custom grade, pine, ceiling height 2.8 m	EA	0.125 Skilled Foreman 2.000 Skilled Workers 1.000 Common Workers 1.000 Power Tool	6.000	7.000	6.500	1.333
114 581-0600	Disappearing stairway without trim, heavy duty, pine to 4 m ceiling high	"		4.000	5.000	4.500	2.000
114 581-0700	Disappearing stairway, spiral for mosque Minaret	LM		7.000	8.000	7.500	1.143

# **DIVISION 11: EQUIPMENT**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
114 581-1000	Disappearing stairway, fire escape, galvanized steel, 3.2 m to 4.0 m ceiling	EA	↓	1.250	1.000	1.125	6.400
<b>114 740</b>	<b>DARKROOM PROCESSING</b>						
<b>114 741</b>	<b>DARKROOM EQUIPMENT:</b>						
114 741-0050	Darkroom equipment, developing sink, 1.2 m x 1.3 m, 130 mm deep	EA	0.125 Skilled Foreman 1.000 Skilled Workers 1.000 Common Laborer 1.000 Tools Set	1.250	1.000	1.125	6.400
114 741-0250	Darkroom equipment, developing sink, 250 mm deep, 610 mm x 2.75 m			1.200	1.000	1.100	6.667
114 741-0650	Darkroom Dryers, dehumidified filtered air 1.2 m x 635 mm x 1.7 m high		0.125 Skilled Foreman 2.000 Skilled Workers 1.000 Common Laborer 1.000 Tools Set	4.000	5.000	4.500	2.000
114 741-2000	Darkroom Processors, automatic, color print, average			1.000	1.000	1.000	6.000
114 741-3000	Darkroom Viewing lights, 500 mm x 610 mm with color correction			4.000	5.000	4.500	2.000
114 741-3500	Darkroom Washers, round, maximum sheet 500 mm x 610 mm		0.125 Skilled Foreman 1.000 Skilled Workers 1.000 Common Laborer 1.000 Tools Set	0.850	1.000	0.925	9.412
114 741-3800	Darkroom Washers, square, maximum sheet 1.2 m x 1.4 m			0.700	1.000	0.850	11.429
114 741-4500	Darkroom Combination tank sink, tray sink, washers, with dry side tables, average			0.850	1.000	0.925	9.412
<b>114 760</b>	<b>REVOLVING DARKROOM DOORS</b>						
<b>114 768</b>	<b>DARKROOM DOORS:</b>						
114 768-0020	Darkroom Revolving door, standard, 2 way, 1 m diameter	OPENING	0.125 Skilled Foreman 2.000 Skilled Workers 1.000 Common Laborer 1.000 Tools Set	4.000	5.000	4.500	2.000
114 768-2500	Darkroom Hinged safety door, 3 way, 1.2 m diameter	OPENING	0.125 Skilled Foreman 2.000 Skilled Workers 1.000 Common Laborer 1.000 Tools Set	3.000	3.000	3.000	2.667
<b>114 800</b>	<b>ATHLETIC / RECREATIONAL</b>						
<b>114 801</b>	<b>HEALTH CLUB EQUIPMENT:</b>						
114 801-0600	Circuit training apparatus, 12 machines, average	SET	0.125 Skilled Foreman 1.000 Skilled Workers 1.000 Common Laborer 1.000 Tools Set	0.650	1.000	0.825	12.308
114 801-0800	Squat racks	EA		4.000	5.000	4.500	2.000
<b>114 805</b>	<b>SCHOOL EQUIPMENT:</b>						
114 805-1000	Basketball backstops, wall mounted, 1.8 m extended, fixed, average	EA	0.125 Skilled Foreman 1.000 Skilled Workers 1.000 Common Laborer 1.000 Tools Set	1.000	1.000	1.000	8.000
114 805-3000	Bleachers, telescoping, manual to 15 tier, average	SET	1.000 Skilled Foreman 3.000 Skilled Workers 2.000 Common Laborer 2.000 Tools Set	75.000	86.000	80.500	0.213
114 805-4200	Exercise ladder, 4.8 m x 480 mm, suspended	EA	0.125 Skilled Foreman 1.000 Skilled Workers 1.000 Common Laborer 1.000 Tools Set	2.000	2.000	2.000	4.000
114 805-4210	Exercise equipment, High bar, floor plate attached			6.000	7.000	6.500	1.333
114 805-4240	Exercise equipment, Parallel bars, adjustable, uneven			4.500	5.000	4.750	1.778
114 805-4300	Exercise equipment, Rope, ceiling mounted, 5.4 m long			4.500	5.000	4.750	1.778
114 805-4360	Exercise equipment, Treadmill, motorized, training type, deluxe			6.000	7.000	6.500	1.333
114 805-4390	Exercise equipment, Weight lifting multi-station, average quality			0.700	1.000	0.850	11.429
114 805-7300	Scoreboards, football, average		1.000 Skilled Foreman 2.000 Skilled Workers 0.250 Equipment Operator 3.000 Common Laborers 0.250 Crane 11 Ton 1.000 Tools Set	0.400	1.000	0.700	25.000
114 805-7500	Scoreboards, basketball, average			1.000	1.000	1.000	10.000
<b>115</b>	<b>INDUSTRIAL &amp; PROCESS EQUIPMENT</b>						
<b>115 000</b>	<b>INDUSTRIAL EQUIPMENT</b>						
<b>115 005</b>	<b>EQUIPMENT INSTALLATION:</b>						
115 005-0010	Industrial equipment, average	MET TON	1.000 Struc. Steel Foreman 4.000 Struc. Steel Workers 1.000 Equip. Oper. (crane) 1.000 Equip. Oper. Oiler 1.000 Crane 82 metric ton	1.500	2.000	1.750	5.333
<b>115 010</b>	<b>SPECIALIZED EQUIPMENT</b>						



## DIVISION 11: EQUIPMENT

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX	D. O. AVRG.	AVRG. E. H.
<b>115 011</b>	<b>VOCATIONAL SHOP EQUIPMENT:</b>						
115 011-0400	Combination belt & disc sander, 150 mm	EA	0.125 Skilled Foreman 1.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	5.000	6.000	5.500	1.600
115 011-0700	Drill press, floor mounted, 300 mm, 0.5 HP			5.000	6.000	5.500	1.600
115 011-0800	Dust collector, not incl. ductwork, 150 mm diameter [6"]			2.000	2.000	2.000	4.000
115 011-1000	Grinders, double wheel, 1 HP			6.000	7.000	6.500	1.333
115 011-1300	Jointer, 100 mm, 1 HP			6.000	7.000	6.500	1.333
115 011-2500	Potter's wheel, motorized			5.000	6.000	5.500	1.600
115 011-2800	Saws, band, 350 mm, 3/4 HP			5.000	6.000	5.500	1.600
115 011-4300	Welder AC arc, 30 A capacity			5.000	6.000	5.500	1.600
<b>116</b>	<b>LABORATORY, PLANETARIUM, OBSERVATORY EQUIPMENT</b>						
<b>116 000</b>	<b>LABORATORY EQUIPMENT</b>						
<b>116 001</b>	<b>LABORATORY EQUIPMENT:</b>						
116 001-0010	Laboratory, cabinets, base, door units, metal	LM	0.125 Skilled Foreman 1.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	7.000	8.000	7.500	1.143
116 001-0011	Laboratory cabinet, drawer units	"		7.000	8.000	7.500	1.143
116 001-1550	Laboratory, counter tops, not incl. base cabinets, acidproof, average	SQM		8.000	9.000	8.500	1.000
116 001-1650	Laboratory, counter tops, not incl. base cabinets, stainless steel, average	"		9.000	10.000	9.500	0.889
116 001-2020	Laboratory Fume hood, with countertop & base, not including HVAC, simple	LM		2.500	3.000	2.750	3.200
116 001-2100	Laboratory Fume hood, with countertop & base, not including HVAC, special, maximum	"		1.500	2.000	1.750	5.333
116 001-2800	Laboratory sink, one piece, flask wash, free standing	EA		3.000	3.000	3.000	2.667
116 001-3000	Laboratory Utility table, acid resistant top with drawers	LM	0.125 Skilled Foreman 1.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	10.000	12.000	11.000	0.800
<b>117</b>	<b>MEDICAL EQUIPMENT</b>						
<b>117 100</b>	<b>HOSPITAL EQUIPMENT</b>						
<b>117 104</b>	<b>CLEAN ROOM EQUIPMENT:</b>						
117 104-0100	Scrub station, stainless steel base, 1 bay 1.5 m	EA	0.125 Skilled Foreman 2.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	2.500	3.000	2.750	3.200
117 104-0400	Stainless steel warm cabinet, solution 600 mm x 760 mm x 1.8 m			7.000	8.000	7.500	1.143
117 104-0500	Clean room sterilizer, 400 x 400 x 660 mm			4.000	5.000	4.500	2.000
117 104-0600	Stainless steel, suture/drug cabinet; 1220 mm x 460 mm x 1524 mm			8.000	9.000	8.500	1.000
<b>117 110</b>	<b>DENTAL EQUIPMENT</b>						
<b>117 110</b>	<b>DENTAL EQUIPMENT:</b>						
117 111-0100	Dental Central suction system, average	EA	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 1.000 Power Tool	2.000	2.000	2.000	4.000
117 111-0300	Dental compressor, average			1.000	1.000	1.000	8.000
117 111-0600	Dental chair, electric or hydraulic, average			0.500	1.000	0.750	16.000
117 111-1000	Drill console with accessories, average			2.500	3.000	2.750	3.200
117 111-2000	Light, ceiling mounted, average			3.000	3.000	3.000	2.667
117 111-2200	Dental Sterilizer			4.000	5.000	4.500	2.000
117 111-3000	X-ray unit, wall, average			5.000	6.000	5.500	1.600
117 111-3105	X-ray panoramic unit, deluxe			1.250	1.000	1.125	6.400
117 111-3500	Developers, x-ray, average			8.000	9.000	8.500	1.000
<b>117 120</b>	<b>EMERGENCY EQUIPMENT:</b>						
117 120-0100	Treatment cabinet with suction compressor	EA	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 1.000 Power Tool	5.000	6.000	5.500	1.600
117 120-0200	Examination light 600 mm, ceiling mounted			3.000	3.000	3.000	2.667
117 120-0300	Plaster sink complete with fitting and trap			3.500	4.000	3.750	2.286
117 120-0400	Splint cabinet with plaster bins			7.000	8.000	7.500	1.143

# **DIVISION 11: EQUIPMENT**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX	D. O. AVRG.	AVRG. E. H.
117 120-0500	Examination room furnishings	ROOM		1.000	1.000	1.000	8.000
117 120-0600	Scale physician's, with height rod, handling in	EA		10.000	12.000	11.000	0.800
117 120-0700	Medicine station			7.000	8.000	7.500	1.143
<b>117 125</b>	<b>FILING EQUIPMENT:</b>						
117 125-1000	Filing cabinets, 2.74 m high, metal painted, complete with tracks, including shelving, 400 mm O.C., double face, electrical operation.	LM	0.125 Skilled Foreman 1.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	0.900	1.000	0.950	8.889
<b>117 130</b>	<b>HYDROTHERAPY EQUIPMENT:</b>						
117 130-0100	Heated therapy unit, humidified, tank with accessories, stainless steel, 335 imperial gal	EA	0.125 Skilled Foreman 1.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	1.500	2.000	1.750	5.333
117 130-0120	Treatment tank 4000 liters			1.500	2.000	1.750	5.333
117 130-0200	Heated therapy unit, humidified, tank with accessories, stainless steel, 200 imperial gal			2.000	2.000	2.000	4.000
117 130-0300	Hubbard tank, 400 gallon, stainless steel			1.500	2.000	1.750	5.333
117 130-0400	Whirlpool bath, fixed, including mixing valves, stainless steel, 457 mm x 610 mm x 1524 mm			3.000	3.000	3.000	2.667
117 130-0500	Whirlpool bath, fixed, including mixing valves, stainless steel, 25 imperial gallon			4.000	5.000	4.500	2.000
117 130-0600	Moisture heat therapy unit table			9.000	10.000	9.500	0.889
117 130-0700	Paraffin bath 325 K, auto controlled			3.000	3.000	3.000	2.667
<b>117 140</b>	<b>INHALATION THERAPY EQUIPMENT:</b>						
117 140-0100	Inhaler	EA	0.125 Skilled Foreman 1.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	18.000	21.000	19.500	0.444
117 140-0200	Lung air volume tester			8.000	9.000	8.500	1.000
117 140-0300	Ventilator complete			18.000	21.000	19.500	0.444
117 140-0400	Suction unit, stainless steel cabinet			16.000	18.000	17.000	0.500
<b>117 150</b>	<b>LABORATORY EQUIPMENT:</b>						
			<i>See also Div. 116001</i>				
117 150-0100	Stainless steel, specimen pass thru boxes	EA	0.125 Skilled Foreman 1.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	1.000	1.000	1.000	8.000
117 150-0200	Distiller, water, steam heated 10 gallon			5.000	6.000	5.500	1.600
117 150-0500	Stainless steel water tank 40 gallon			5.000	6.000	5.500	1.600
117 150-0600	Laboratory washer			3.000	3.000	3.000	2.667
117 150-0700	Blood plasma freezer, 0.58 cum, 7 drawers, 863 mm x 910 mm x 2030 mm high			5.000	6.000	5.500	1.600
117 150-0800	Blood plasma freezer, 1.15 cum, 14 drawers, 1500 mm x 910 mm x 2057 mm high			4.000	5.000	4.500	2.000
<b>117 155</b>	<b>LAUNDRY HOSPITAL EQUIPMENT:</b>						
			<i>See also div. 111101</i>				
117 155-0100	Extractor 100 kg, with accessories	EA	0.125 Skilled Foreman 2.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	0.150	0.500	0.325	53.333
117 155-0200	Washer/extractor 300 kg.			0.080	0.100	0.090	100.000
117 155-0300	Dryer steam 200 kg			0.180	0.500	0.340	44.444
117 155-0400	Ironer/folder, 2 lane			0.200	0.500	0.350	40.000
117 155-0600	Flat ironer, 6 roller			0.080	0.100	0.090	100.000
117 155-0700	Folder 3 lane			0.300	0.500	0.400	26.667
<b>117 160</b>	<b>MONITORING EQUIPMENT:</b>						
117 160-0100	CCU/ICU Cardioscope, 1 channel, bed side	EA	0.125 Skilled Foreman 1.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	2.000	2.000	2.000	4.000
117 160-0200	BP monitor, with readout, bed side			2.000	2.000	2.000	4.000
117 160-0300	Nurse display for CCU beds, including beds			0.500	1.000	0.750	16.000
<b>117 165</b>	<b>MORTUARY EQUIPMENT:</b>						
117 165-0100	Autopsy table standard	EA	0.125 Skilled Foreman 1.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	4.000	5.000	4.500	2.000
117 165-0200	Mortuary refer, 2 tier, 6 places			1.000	1.000	1.000	8.000
117 165-0300	Mortuary refer, 2 tier, 4 places			1.000	1.000	1.000	8.000
117 165-0500	Mortuary refrigerator, end operated, 6 capacity w/roll-in compartments and sliding tray			0.600	1.000	0.800	13.333



**DIVISION 11: EQUIPMENT**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX	D. O. AVRG.	AVRG. E. H.
<b>117 170</b>	<b>NUCLEAR EQUIPMENT:</b>						
117 170-0100	Gama camera, single head, multifomat imaging, computerized w/software, black and white a color polaroid camera	EA	0.125 Skilled Foreman 1.000 Skilled Workers 1.000 Common Laborer 1.000 Power Tool	0.100	0.500	0.300	80.000
117 170-0200	Stress system, nuclear cardiology			0.100	0.500	0.300	80.000
117 170-0300	Heat system, nuclear cardiology			2.000	2.000	2.000	4.000
<b>117 174</b>	<b>NURSING &amp; NURSING STATION EQUIPMENT:</b>				0.000	0.000	
117 174-0100	Nurse call, 2 way, audio visual, 40 station	EA	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 1.000 Power Tool	0.200	0.500	0.350	40.000
117 174-0120	Staff locating station			12.000	14.000	13.000	0.667
117 174-0200	Stainless steel, nourishment station, 2.1 x 2 m			3.000	3.000	3.000	2.667
117 174-0500	Medical preparation cabinet, stainless steel, 1800 mm x 2030 mm	LM		3.000	3.000	3.000	2.667
<b>117 180</b>	<b>OBSTETRICAL &amp; NURSERY EQUIPMENT:</b>						
117 180-0100	Delivery table	EA	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 1.000 Power Tools	0.800	1.000	0.900	10.000
117 180-0200	Incubator, isolation			6.000	7.000	6.500	1.333
117 180-0300	Incubator, warming			6.000	7.000	6.500	1.333
<b>117 182</b>	<b>PHYSICAL THERAPY EQUIPMENT:</b>						
117 182-0100	Tables walk-off electric	EA	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 1.000 Power Tools	2.000	2.000	2.000	4.000
117 182-0200	Exercise chair			4.000	5.000	4.500	2.000
117 182-0300	Treadmill, motorized, 5 speeds			6.000	7.000	6.500	1.333
117 182-0400	Treadmill, adjustable			12.000	14.000	13.000	0.667
117 182-0600	Station, dietary			1.750	2.000	1.875	4.571
<b>117 190</b>	<b>STERILIZERS:</b>						
117 190-0100	Sterilizer, floor loading, 710 mm x 1700 mm x 1320 mm, 1 or 2 door, steam	EA	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 1.000 Tool Set	0.070	0.100	0.085	114.286
117 190-0200	Sterilizer, recessed with automatic doors, 600 mm x 915 mm x 1220 mm, steam, pass - thru	EA	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 1.000 Tool Set	0.100	0.500	0.300	80.000
117 190-0300	Sterilizer, recessed with automatic doors, 600 x 915 mm x 915 mm, 1 door steam			0.100	0.500	0.300	80.000
117 190-0400	Sterilizer, recessed with automatic doors, 600 mm x 915 mm x 1520 mm, 1 door gas			0.120	0.500	0.310	66.667
117 190-0500	Sterilizer, recessed with automatic doors, 600 mm x 915 mm x 1520 mm, gas, pass-thru			0.120	0.500	0.310	66.667
117 190-0600	Sterilizer, recessed with automatic doors, 600 mm x 915 mm x 1520 mm, gas/cryogenic			0.110	0.500	0.305	72.727
117 190-0700	Gas aerator 600 mm x 915 mm x 1520 mm			0.850	1.000	0.925	9.412
117 190-0800	Gas aerator 400 mm x 915 mm x 1220 mm			1.500	2.000	1.750	5.333
117 190-0900	Steam generator up to 10 HP			1.750	2.000	1.875	4.571
<b>117 192</b>	<b>SURGICAL EQUIPMENT:</b>						
117 192-0100	Surgery table, minor, stationary, electrical	EA	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 1.000 Tool Set	0.700	1.000	0.850	11.429
117 192-0200	Surgery table, stationary, electrical			0.500	1.000	0.750	16.000
117 192-0220	Surgery table, orthopedic, stationary, electrical			0.600	1.000	0.800	13.333
117 192-0240	Surgery service island			0.700	1.000	0.850	11.429
117 192-0300	Surgical light single arm			1.250	1.000	1.125	6.400
117 192-0400	Surgical light dual arm			0.800	1.000	0.900	10.000
117 192-0500	Surgical light triple arm			0.750	1.000	0.875	10.667
117 192-0550	Surgical light, major operation room, dual head average			0.700	1.000	0.850	11.429
117 192-1000	scrub surgical, stainless steel, 3 way unit station, average			1.100	1.000	1.050	7.273
<b>117 196</b>	<b>WASHERS, UTENSILES &amp; INSTRUMENTS:</b>						
117 196-0100	Utensil washer-sterilizer, 685 mm x 685 mm x 1524 mm, free stand	EA	0.125 Skilled Foreman 1.000 Skilled Workers 1.000 Common Laborer 1.000 Tool Set	0.600	1.000	0.800	13.333

**DIVISION 11: EQUIPMENT**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX	D. O. AVRG.	AVRG. E. H.
117 196-0200	Utensil washer, conveyor, pass-thru			0.150	0.500	0.325	53.333
117 196-0300	Instrument cleaner, sonic, 2 compartment			0.300	0.500	0.400	26.667
117 196-0400	Glass washer, steam, 400 mm x 500 mm x 400 mm, pass-thru			0.200	0.500	0.350	40.000
117 196-0500	Drying oven, 635 mm x 635 mm x 1270 mm, steam			0.650	1.000	0.825	12.308
117 196-0600	Charging table stainless steel, 2 sink, 1350 mm	↓	↓	3.000	3.000	3.000	2.667
<b>117 198</b>	<b>X-RAY EQUIPMENT:</b>						
117 198-0100	X-ray stationery average	EA	0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 1.000 Tool Set	0.500	1.000	0.750	16.000
117 198-0200	X-ray, Cardiac catheterization unit, complete		1.000 Skilled Foreman 0.500 High Skilled Specialist 3.000 Skilled Workers 2.000 Common Laborer 2.000 Special Tool Set	0.200	0.500	0.350	40.000
117 198-0300	X-ray ceiling mounted, general purpose		0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 1.000 Tool Set	0.200	0.500	0.350	40.000
117 198-0400	X-ray Dark room safelight, 600 mm long fluorescent with filter			6.000	7.000	6.500	1.333
117 198-0500	X-ray developing tank, 10 gallon, stainless steel complete with mixing valves			2.000	2.000	2.000	4.000
117 198-0600	X-ray, film handling unit, automatic day light, floor mounted		↓	1.250	1.000	1.125	6.400
117 198-0700	X-ray, Magnetic resonance imaging, 1.5 Tesla		1.000 Skilled Foreman 0.500 High Skilled Specialist 3.000 Skilled Workers 2.000 Common Laborer 2.000 Special Tool Set	0.100	0.500	0.300	80.000
117 198-0800	X-ray, Radiographic units, Mammographic, vertically adjustable plate		0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 1.000 Tool Set	0.500	1.000	0.750	16.000
117 198-0900	X-ray, Scanners, computed topography, complete and with computer and console		1.000 Skilled Foreman 0.500 High Skilled Specialist 3.000 skilled Workers 2.000 Common Laborer 2.000 Special Tool Set	0.150	0.500	0.325	53.333
117 198-1000	X-ray wall mounted, chest		0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common Laborer 1.000 Tool Set	0.600	1.000	0.800	13.333
117 198-1100	X-ray table	↓	↓	0.350	0.500	0.425	22.857



A decorative geometric pattern, likely a traditional Islamic or Arabesque design, is located in the top right corner of the page. It features a complex, repeating lattice of lines forming various polygons and star-like shapes, with some areas filled with a darker, textured pattern. The pattern is set against a light background and is partially obscured by a large, white, curved shape that sweeps from the top left towards the bottom right.

# Division 12

## Furnishings

## **Division 12.. Furnishings..**

### **Estimating Tips:**

#### **General**

Most of these items are purchased by the owner and placed by the supplier. Do not assume the items in this division will be purchased and installed by the supplier.

Check the specifications for responsibilities and include receiving, installation and mechanical and electrical hook-ups in the appropriate divisions.

Some items require some type of support system that is not usually furnished with the item. Examples of these systems include blocking for the attachment casework and heavy drapery rods.



## DIVISION 12 : FURNISHINGS

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVERG.	EQUIP. HOURS
<b>123</b>	<b>MANUFACTURED CASEWORK</b>						
<b>123 010</b>	<b>METAL CASEWORK</b>						
<b>123 015</b>	<b>KEY CABINETS:</b>						
123 015-0010	Key cabinet, wall mounted, 60 key capacity	EA	0.125 Labor Foreman 1.000 Carpenter 1.000 Common Laborer 1.000 Tools Set	8.000	9.000	8.500	0.320
123 015-0100	Key cabinet, wall mounted, 1200 key capacity			8.000	9.000	8.500	0.667
123 015-0200	Key cabinet, drawer type, 600 key capacity			8.000	9.000	8.500	0.400
123 015-0500	Key cabinet, tray type, 50 key capacity			8.000	9.000	8.500	0.229
<b>123 500</b>	<b>HOSPITAL CASEWORK</b>						
<b>123 501</b>	<b>CABINETS: For wood kitchen cabinets, see division 064-102</b>						
123 501-0500	Cabinets, hospital, base cabinets, laminated plastic or stainless steel	LM	0.125 Labor Foreman 1.000 Carpenter 1.000 Common Laborer 1.000 Power Tools	8.000	9.000	8.500	1.333
123 501-1300	Hospital, cabinet base trim, 100 mm high, enameled steel or stainless steel	LM		8.000	9.000	8.500	0.160
123 501-1650	Hospital cabinet counter top, laminated plastic or stainless steel, with backsplash	SQM		8.000	9.000	8.500	0.889
123 501-1800	Hospital cabinet counter top, plastic with sink cutout & backsplash	EA		8.000	9.000	8.500	2.000
123 501-2000	Hospital cabinet drop-in stainless steel counter top 1092 mm x 533 mm sink	SQM		8.000	9.000	8.500	0.889
123 501-2100	Hospital cabinet nurses station, door type, laminated plastic, enameled steel or stainless steel	LM		8.000	9.000	8.500	2.667
123 501-2400	Hospital cabinet, nurses station, door type, laminated plastic, four drawer type			8.000	9.000	8.500	2.000
123 501-2500	Hospital, wall cabinets, with glass doors, laminated plastic, enameled steel or stainless steel			8.000	9.000	8.500	2.000
123 501-3500	Hospital, kitchen base cabinets, metal, average			8.000	9.000	8.500	1.143
123 501-3700	Hospital, kitchen wall cabinets, metal, average			8.000	9.000	8.500	1.000
123 501-5000	School cabinets, 610 mm deep, metal, 2.1 m high units			8.000	9.000	8.500	1.600
123 501-5150	School cabinets, 610 mm deep, metal, 1.2 m high units			8.000	9.000	8.500	1.143
123 501-5450	School cabinets, wood custom fabricated, 610 mm deep, 810 mm high counter			8.000	9.000	8.500	1.143
123 501-5600	Counter top for school cabinets, with backsplash.	SQM		8.000	9.000	8.500	0.889
<b>123 800</b>	<b>DISPLAY CASEWORK</b>						
<b>123 801</b>	<b>DISPLAY CASES:</b>						
123 801-0020	Display cases, all glass, aluminum, or wood, or bronze frame, 1067 mm high x 914 mm x 300 mm deep, <b>free standing</b>	EA	0.125 Labor Foreman 2.000 Carpenter 1.000 Common Laborer 1.000 Tools Set	8.000	9.000	8.500	0.800
123 801-0100	Display cases, all glass, aluminum, or wood, or bronze frame, 1760 mm high x 1220 mm x 457 mm deep, <b>free standing</b>			8.000	9.000	8.500	1.000
123 801-2010	Display cases, glass front, aluminum frame, non-illuminated, one section 914 mm x 1220 mm x 400 mm, wall mounted			8.000	9.000	8.500	1.333
123 801-2100	Display cases, glass front, aluminum frame, non-illuminated, one section 1525 mm x 1220 mm x 406 mm, wall mounted			8.000	9.000	8.500	1.600
123 801-2200	Display cases, glass front, aluminum frame, non-illuminated, one section 1830 mm x 1220 mm x 400 mm, wall mounted			8.000	9.000	8.500	2.000
123 801-2500	Display cases, glass front, aluminum frame, non-illuminated, two section 2.4 m x 1.2 m x 400 mm, wall mounted			8.000	9.000	8.500	2.667
123 801-2600	Display cases, glass front, aluminum, wood or bronze frame non-illuminated, two section 3048 mm x 1219 mm x 406 mm, wall mounted			8.000	9.000	8.500	3.200
123 801-3000	Display cases, glass front, aluminum frame, non-illuminated, three section 4.8 m x 1.21 m x 400 mm, wall mounted			8.000	9.000	8.500	4.000
123 801-3500	Display cases, glass front, aluminum frame, illuminated with fluorescent lights, one section 914 mm x 1220 mm x 400 mm, wall mounted	SECTION		8.000	9.000	8.500	1.333
123 801-4100	Table exhibit cases, 914 mm wide, 914 mm high, 1220 mm long, sloping top	EA		8.000	9.000	8.500	2.000
<b>123 900</b>	<b>RESIDENTIAL CASEWORK</b>						
<b>123 905</b>	<b>IRONING CENTER:</b>						
123 905-0010	Ironing center, including cabinet, board & light, average	EA	0.125 Labor Foreman 1.000 Carpenter 1.000 Common Laborer 1.000 Power Tools	8.000	9.000	8.500	3.200
<b>125</b>	<b>WINDOW TREATMENT</b>						
<b>125 100</b>	<b>BLINDS</b>						
125 103-0090	Blinds, interior, solid colors, horizontal, 25 mm aluminum slats, average	SQM	0.125 Labor Foreman 1.000 Carpenter 1.000 Common Laborer 1.000 Power Tools	8.000	9.000	8.500	0.160
125 103-0250	Blinds, interior, solid colors, horizontal, 50 mm aluminum or steel slats, average			8.000	9.000	8.500	0.200
125 103-1500	Blinds, interior, solid colors, vertical, 76 mm to 127 mm PVC or cloth strips, average			8.000	9.000	8.500	0.200
125 103-1800	Blinds, interior, solid colors, vertical, 100 mm aluminum slats, average			8.000	9.000	8.500	0.200
125 103-1950	Blinds, interior, solid colors, vertical, mylar mirror-finish strips, to 200 mm wide, average			8.000	9.000	8.500	0.229



**DIVISION 12 : FURNISHINGS**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVERG.	EQUIP. HOURS
125 103-3600	Blinds, interior, wood folding panels with movable louvers, 250 mm x 1010 mm each	PAIR	↓	8.000	9.000	8.500	0.400
125 103-4300	Blinds, interior, wood folding panels with fixed louver type, 300 mm x 910 mm each	PAIR	0.125 Labor Foreman 1.000 Carpenter 1.000 Common Laborer 1.000 Power Tools	8.000	9.000	8.500	0.400
125 103-5750	Blinds, interior, wood raised panel type, 406 mm x 914 mm	↓	↓	8.000	9.000	8.500	0.400
<b>125 200</b>	<b>SHADES</b>						
<b>125 201</b>	<b>SHADES:</b>						
125 201-0200	Shades basswood, roll-up, stain finish, 22 mm slats	SQM	0.125 Labor Foreman 1.000 Carpenter 1.000 Common Laborer 1.000 Power Tools	8.000	9.000	8.500	0.200
125 201-0900	Shades, mylar, non-heat reflective, single or double layer	↓	↓	8.000	9.000	8.500	0.114
125 201-1500	Shades, vinyl heavy weight, 6 gauge	↓	↓	8.000	9.000	8.500	0.114
125 201-3000	Shades, woven aluminum 10 mm thick, lightproof and fireproof	↓	↓	8.000	9.000	8.500	0.229
<b>125 300</b>	<b>DRAPE / CURTAIN HARDWARE</b>						
<b>125 301</b>	<b>DRAPERY HARDWARE:</b>						
125 301-0030	Drape/curtain, standard traverse, per meter, average	LM	0.125 Labor Foreman 1.000 Carpenter 1.000 Common Laborer 1.000 Power Tools	8.000	9.000	8.500	0.333
125 301-4000	Drape/curtain, traverse rods, adjustable, 710 mm to 1220 mm	EA		8.000	9.000	8.500	0.400
125 301-4020	Drape/curtain, traverse rods, adjustable, 1220 mm to 2135 mm			8.000	9.000	8.500	0.444
125 301-4040	Drape/curtain, traverse rods, adjustable, 1676 mm to 3050 mm			8.000	9.000	8.500	0.500
125 301-4060	Drape/curtain, traverse rods, adjustable, 2135 mm to 3960 mm			8.000	9.000	8.500	0.571
125 301-4080	Drape/curtain, traverse rods, adjustable, 3048 mm to 5590 mm	↓	↓	8.000	9.000	8.500	0.667
125 301-4100	Drape/curtain, traverse rods, adjustable, 5790 mm to 7925 mm	↓	↓	8.000	9.000	8.500	0.727
<b>126</b>	<b>FURNITURE &amp; ACCESSORIES</b>						
<b>126 100</b>	<b>LANDSCAPE PARTITIONS</b>						
<b>126 105</b>	<b>PANELS &amp; DIVIDERS:</b>						
126 105-0100	Fabric panel, fire rated, fabric edged, 1 m high, 0.6 m wide	EA	0.125 Labor Foreman 2.000 Common Laborer	0.000	0.000	0.000	0.000
126 105-0300	Fabric panel, fire rated, fabric edged, 1 m high, 1.5 m wide			0.000	0.000	0.000	0.000
126 105-0480	Fabric panel, fire rated, fabric edged, 1.5 m high, 1.5 m wide			0.000	0.000	0.000	0.000
126 105-1400	Fabric panel, fire rated, fabric edged, 1.8 m high, 1.5 m wide			0.000	0.000	0.000	0.000
126 105-2400	Fabric panel, fire rated, hardwood edged, 1.5 m high, 1.5 m wide	↓	↓	0.000	0.000	0.000	0.000
126 105-2860	Fabric panel, fire rated, hardwood edged, 1.8 m high, 1.5 m wide	↓	↓	0.000	0.000	0.000	0.000
<b>126 200</b>	<b>FURNITURE</b>						
<b>126 203</b>	<b>BANK FURNITURE:</b>						
			<i>See Division 126222</i>				
<b>126 205</b>	<b>FURNITURE, DORMITORY:</b>						
			<i>LOW RISE BUILDING 2 FLOORS</i>				
126 206-0100	Dormitory, single bed complete, hardwood, average	EA	0.125 Labor Foreman 1.000 Carpenter 1.000 Common Laborer 1.000 Power Tools	8.000	9.000	8.500	0.500
126 206-0120	Dormitory, single bed 2 layers complete, hardwood, average			8.000	9.000	8.500	0.667
126 206-0200	Dormitory wardrobe, 1 m wide	↓	↓	8.000	9.000	8.500	0.571
126 206-1000	Dormitory, built-in chest, four drawer, average	↓	↓	8.000	9.000	8.500	3.200
126 206-1200	Dormitory, desk top, built-in, laminated plastic, 610 mm deep, average	LM		8.000	9.000	8.500	0.667
126 206-1450	Dormitory, desk top, built-in, laminated plastic, 760 mm deep, average	*		8.000	9.000	8.500	0.727
126 206-1750	Dormitory, dressing unit, built-in, average	EA	↓	8.000	9.000	8.500	3.200
<b>126 210</b>	<b>FURNITURE, HOSPITAL:</b>						
			<i>LOW RISE BUILDING UP TO 4 FLOORS</i>				
126 210-0100	Hospital beds, manual, average	EA	0.125 Skilled Foreman 1.000 Skilled Laborer 1.000 Common Laborer 1.000 Power Tool	8.000	9.000	8.500	2.000
126 210-0300	Hospital bed, manual and electric, average			8.000	9.000	8.500	2.667
126 210-0600	Hospital bed, all electric, average			8.000	9.000	8.500	4.000
126 210-0900	Hospital bed, manual, nursing home, average			8.000	9.000	8.500	1.600
126 210-1100	Hospital, overbed table, laminated top			8.000	9.000	8.500	0.160
126 210-1200	Hospital, patient wall systems, not including plumbing, average			8.000	9.000	8.500	2.667
126 210-2000	Hospital TV set, 480 mm ceiling hung	↓	↓	8.000	9.000	8.500	5.714
<b>126 214</b>	<b>FURNITURE, HOTEL:</b>						
			<i>LOW RISE BUILDING UP TO 7 FLOORS</i>				
126 214-0010	Hotel front desk, built-in, base cabinets, continuous shelf oak top, 610 mm wide, quality granite top, provided with raceways for data & power wiring	LM	0.125 Labor Foreman 1.000 Carpenter 1.000 Common Laborer 1.000 Power Tools	8.000	9.000	8.500	8.000



**DIVISION 12 : FURNISHINGS**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVERG.	EQUIP. HOURS
126 214-0020	Hotel lodge in quality, guest room set, 2 beds/room, complete with standard furniture average	ROOM	0.125 Labor Foreman 2.000 Carpenter 0.250 Electrician 3.000 Common Laborer 1.000 Power Tools	8.000	9.000	8.500	13.709
126 214-0050	Hotel 3 star guest room, 2 beds per room, complete with standard furniture, average			8.000	9.000	8.500	17.152
126 214-0100	Hotel 4 star guest room, average			8.000	9.000	8.500	29.805
126 214-0200	Hotel 5 star guest room, average			8.000	9.000	8.500	39.014
126 214-0300	Hotel guest room, twin bed, cherry, complete	EA	0.125 Labor Foreman 1.000 Carpenter 1.000 Common Laborer 1.000 Power Tools	8.000	9.000	8.500	0.800
126 214-0400	Hotel guest room bed, queen size, oak, complete			8.000	9.000	8.500	1.000
126 214-0500	Hotel guest room bed, king size, cherry complete			8.000	9.000	8.500	1.143
126 214-1000	Hotel guest room, desk & chair, cherry, 600 mm x 1000 mm x 740 mm.			8.000	9.000	8.500	0.333
126 214-1600	Hotel guest room, dining table chair, quality fabric, padded, and solid cherry.			8.000	9.000	8.500	0.145
126 214-1700	Hotel guest room, dining table, cherry			8.000	9.000	8.500	0.286
126 214-2000	Hotel guest room, dresser unit, cherry, 1.6 m long			8.000	9.000	8.500	0.667
126 214-2500	Hotel guest room, luggage table/ rack		0.125 Labor Foreman 1.000 Common Laborer	0.000	0.000	0.000	0.000
126 214-3000	Hotel guest room, night table			8.000	9.000	8.500	0.178
126 214-3500	Hotel refrigerator unit			8.000	9.000	8.500	0.250
126 214-4000	Hotel guest room, safe, with battery back-up			8.000	9.000	8.500	0.400
126 214-4200	Hotel guest room, sofa, quality all fabric			8.000	9.000	8.500	0.333
126 214-4500	Hotel guest room, stand light 100 watt		1 Electrician 1 Tools Set	8.000	9.000	8.500	0.400
126 214-5000	Hotel guest room, table lamp, 100 watt			8.000	9.000	8.500	0.400
126 214-6000	Hotel guest room top chair, quality all fabric		0.125 Labor Foreman 1.000 Common Laborer	0.000	0.000	0.000	0.000
126 214-7000	Hotel guest room, TV set, with tuner, 480 mm screen		1 Electrician 1 Tools Set	8.000	9.000	8.500	0.667
<b>126 218</b>	<b>FURNITURE, LIBRARY:</b>						
126 218-0100	Library, attendant desk, 914 mm x 1575 mm x 737 mm high	EA	0.125 Labor Foreman 1.000 Carpenter 1.000 Common Laborer 1.000 Power Tools	8.000	9.000	8.500	0.400
126 218-0220	Library, table with bulletin board			8.000	9.000	8.500	0.400
126 218-0800	Library, card catalogue, 30 tray unit			8.000	9.000	8.500	0.308
126 218-0840	Library, card catalogue, 60 tray unit			8.000	9.000	8.500	0.400
126 218-0880	Library, card catalogue, 72 tray unit			8.000	9.000	8.500	0.500
126 218-1000	Library, carrels, double face, initial unit, 914 mm x 600 mm x 738 mm.			8.000	9.000	8.500	0.571
126 218-4000	Library, dictionary stand, stationary, or revolving			8.000	9.000	8.500	0.308
126 218-4200	Library, exhibit case, table style, 1524 mm x 711 mm x 914 mm			8.000	9.000	8.500	0.471
<b>126 222</b>	<b>FURNITURE, OFFICE: LOW RISE BUILDING UP TO 7 FLOORS</b>						
126 222-0020	Office desk, metal double pedestal 760 mm high, 760 mm wide, 1.5 m long	EA	0.125 Labor Foreman 2.000 Common Laborer	0.000	0.000	0.000	0.000
126 222-0040	Office desk, metal double pedestal 760 mm high, 900 mm wide, 1.8 m long			0.000	0.000	0.000	0.000
126 222-0100	Office desk, wood double pedestal 760 mm high, 760 mm wide, 1.5 m long			0.000	0.000	0.000	0.000
126 222-0200	Office desk, wood double pedestal 760 mm high, 900 mm wide, 1.8 m long			0.000	0.000	0.000	0.000
126 222-0300	Executive desk with side extension, 2 m long		0.125 Labor Foreman 1.000 Carpenter 1.000 Common Laborer 1.000 Power Tools	8.000	9.000	8.500	0.889
126 222-0400	Office metal desk, single pedestal, 760 mm high, 760 mm wide, 1.5 m long		0.125 Labor Foreman 2.000 Common Laborer	0.000	0.000	0.000	0.000
126 222-0500	Office wood desk, single pedestal, 760 mm high, 760 mm wide, 1.5 m long			0.000	0.000	0.000	0.000
126 222-0700	Secretarial desk unit, metal, 457 mm x 1100 mm		0.125 Labor Foreman 1.000 Carpenter 1.000 Common Laborer 1.000 Power Tools	8.000	9.000	8.500	0.533
126 222-1500	Computer station unit with upper shelf			8.000	9.000	8.500	0.667
126 222-6000	Office furniture, conference table 12 persons, wood, cherry veneered, boat, 1.35 m x 4 m		0.125 Labor Foreman 1.000 Carpenter 2.000 Common Laborer 1.000 Power Tools	8.000	9.000	8.500	2.667
126 222-6050	Office conference table, 16 persons, solid wood, oak facing, boat, 1.35 m x 4.8 m, average			8.000	9.000	8.500	3.200
126 222-6070	Office conference table, 20 persons, solid wood, oak facing, boat, 1.6 m x 5.4 m, average			8.000	9.000	8.500	4.000
126 222-6100	Office conference table, 24 persons, solid wood, oak facing, boat, 1.8 m x 6.0 m, average			8.000	9.000	8.500	4.571
126 222-6720	Office conference table, 8 persons, solid wood, oak facing, rectangle, 1.2 m x 2.2 m, average			8.000	9.000	8.500	1.000



# **DIVISION 12 : FURNISHINGS**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVERG.	EQUIP. HOURS
126 222-6740	Office conference table, 10 persons, solid wood, oak facing, rectangle, 1.2 m x 3.0 m, average	EA	0.125 Labor Foreman 1.000 Carpenter 2.000 Common Laborer 1.000 Power Tools	8.000	9.000	8.500	1.333
126 222-6760	Office conference table, 12 persons, solid wood, oak facing, rectangle, 1.2 m x 4.0 m, average			8.000	9.000	8.500	2.000
126 222-8000	Office leather sofa, 3 persons average, including handling into building.			8.000	9.000	8.500	0.400
<b>126 226 FURNITURE, RESTAURANT</b>							
126 226-0200	Restaurant counter with base cabinets	LM	0.125 Labor Foreman 1.000 Carpenter 1.000 Common Laborer 1.000 Power Tools	8.000	9.000	8.500	3.333
126 226-0300	Restaurant, booth seating, see division 127-401						
126 226-2000	Restaurant, chair, bentwood side chair, metal, average	LM	0.125 Labor Foreman 1.000 Carpenter 1.000 Common Laborer 1.000 Power Tools	6.000	9.000	8.500	0.133
<b>126 230 FURNITURE, SCHOOL</b>							
126 230-2000	School desk, single pedestal, top book compartment, average, handling into building.	EA	0.125 Labor Foreman 2.000 Common Laborer	0.000	0.000	0.000	0.000
126 230-2200	School desk, flip top, minimum, handling into building			0.000	0.000	0.000	0.000
126 230-4000	School desk, laboratory, w/ electrical outlets, connected, & including handling		0.125 Labor Foreman 1.000 Carpenter 1.000 Common Laborer 1.000 Power Tools	8.000	9.000	8.500	0.667
<b>126 500 FURNITURE ACCESSORIES</b>							
<b>126 501 ASH/TRASH RECEIVERS</b>							
126 501-1060	Ash um, cylindrical metal, 250 mm diameter, 660 mm high	EA	0.125 Labor Foreman 1.000 Common Laborer	0.000	0.000	0.000	0.000
126 501-5540	Trash receptacle, plastic with lid 170 L			0.000	0.000	0.000	0.000
<b>126 507 MULTI MEDIA BOARDS</b>							
<b>126 900 FLOOR MATS &amp; FRAMES</b>							
<b>126 901 FLOOR MATS</b>							
126 901-0100	Floor mats including recessed frame, in laid black rubber, 13 mm thick, solid or perforated	SQM	0.125 Labor Foreman 1.000 Carpenter 1.000 Common Laborer 1.000 Power Tools	8.000	9.000	8.500	0.333
126 901-0600	Floor link mats, including nosings, aluminum, or galvanized steel 10 mm thick			8.000	9.000	8.500	0.400
126 901-0900	Floor mat, skate lock tile, 610 mm x 610 mm x 13 mm thick, rubber, black			8.000	9.000	8.500	0.500
126 901-1150	Floor mat, skate lock tile, 305 mm x 305 mm x 13 mm outside corner, black			8.000	9.000	8.500	0.667
<b>127 MULTIPLE SEATING</b>							
<b>127 100 MISCELLANEOUS SEATING</b>							
<b>127 101 SEATING</b>							
127 101-0010	Seating benches,						
127 101-0100	Bleachers,						
127 101-1000	Lecture hall seating, pedestal type, average	EA	0.125 Labor Foreman 2.000 Carpenter 1.000 Common Laborer 1.000 Tools Set	8.000	9.000	8.500	0.250
127 101-2000	Auditorium chair, seating, Padded & veneered			8.000	9.000	8.500	0.250
<b>127 400 BOOTH &amp; TABLES</b>							
<b>127 401 BOOTHS:</b>							
127 401-1000	Booth, banquet, upholstered seat and back, straight average	LM	0.125 Labor Foreman 2.000 Carpenter 1.000 Common Laborer 1.000 Tools Set	8.000	9.000	8.500	0.667
127 401-1600	Booth, banquet, upholstered seat and back "L" or "U" shape, average			8.000	9.000	8.500	0.889
127 401-3000	Booth, prefabricated seating, fixed, one piece plastic chair and plastic laminate table top including four seat, 610 mm x 610 mm table, average	EA		8.000	9.000	8.500	0.500
127 401-3200	Booth, prefabricated seating, fixed, one piece plastic chair and plastic laminate table top including four seat, 610 mm x 1220 mm table, average			8.000	9.000	8.500	0.5
127 401-3300	Booth, prefabricated seating, fixed, one piece plastic chair and plastic laminate table top including four seat, 610 mm x 1930 mm table, average			8.000	9.000	8.500	0.667
127 401-3400	Booth, prefabricated seating, fixed, one piece plastic chair and plastic laminate table top including four seat, 610 mm x 2590 mm table, average			8.000	9.000	8.500	0.667
127 401-4000	Free standing, wood fiber core with plastic laminate, single booth, 610 mm wide			8.000	9.000	8.500	0.471
127 401-4100	Free standing, wood fiber core with plastic laminate, single booth, 1220 mm wide			8.000	9.000	8.500	0.500
127 401-4200	Free standing, wood fiber core with plastic laminate, single booth, 1524 mm wide			8.000	9.000	8.500	0.5
127 401-4400	Free standing, wood fiber core with plastic laminate, double booth, 1220 mm wide			8.000	9.000	8.500	0.5
<b>128 INTERIOR PLANTS &amp; PLANTERS</b>							
<b>128 150 PLANTERS</b>							
<b>128 155 PLANTERS:</b>							



**DIVISION 12 : FURNISHINGS**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVERG.	EQUIP. HOURS
28 155-1000	Planter, fiberglass, hanging, 300 mm diameter, 178 mm high	EA	0.125 Labor Foreman 1.000 Carpenter 1.000 Common Laborer 1.000 Power Tools	8.000	9.000	8.500	0.308
28 155-1650	Planter, fiberglass, free standing, rectangular, 1524 mm long, 760 mm high x 710 mm wide			8.000	9.000	8.500	0.333
28 155-8750	Planter, wood, fiberglass liner square, hanging, 360 mm square, 380 mm high, average			8.000	9.000	8.500	0.364





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A decorative geometric pattern, likely a traditional Islamic or Arabesque design, is located in the top right corner of the page. It features a complex, repeating lattice of lines forming various polygons and star-like shapes. The pattern is rendered in a dark, textured style, possibly a woodcut or a high-contrast print, and is partially obscured by a diagonal white line that cuts across the page from the top left towards the bottom right.

# Division 13

## Special Construction

## **Division 13.. Special Construction..**

### **Estimating Tips:**

#### **General**

The items and systems in this division are usually estimated, purchased, supplied and installed as a unit by one or more sub-contractors.

The estimator must ensure that all parties are operating from the same set of specifications and assumptions and that all necessary items are estimated and will be provided.

Many times the complex items and systems are covered but the more common ones such as excavation or a crane are overlooked for the very reason that everyone assumes nobody could miss them.

The estimator should be the central focus and be able to ensure that all systems are complete.

Estimators shall focus on all accessories for pre-engineered structures and utility supplies for some special construction items, usually missed on overlooked.

#### **131 Pre-Engineered Structures:**

Focus on estimating foundations, slabs as well as rough electro-mechanical installations. Usually as pre-engineered structures are provided as a shell, estimators shall focus on all additional items and features and good understanding to the scope of work required.

#### **132 Tanks, Covers & Filtration Equipment:**

Items listed in this book don't include foundation, tank accessories, guages, detection of additional man-holes and piping. Refer to related divisions 2, 3, and 15 to price such items.



**DIVISION 13 : SPECIAL CONSTRUCTION**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
<b>130</b>	<b>SPECIAL CONSTRUCTION</b>						
<b>130 100</b>	<b>AIR SUPPORTED STRUCTURES</b>						
<b>130 111</b>	<b>AIR SUPPORTED STRUCTURES</b>						
130 111-0100	Air supported warehouse, polyester/vinyl fabric, 794 gram, welded seams, tension cables, primary & auxiliary inflation system, airtight, personnel doors and liner up to 464 SQM	SQM FLOOR	0.125 Labor Foreman 4 Common Labor 2 Tools Set	300.000	345.000	322.500	0.053
130 111-0400	Air supported warehouse, polyester/vinyl fabric, 794 gram, welded seams, tension cables, primary & auxiliary inflation system, airtight, personnel doors and liner above 1000 SQM		0.25 Labor Foreman 8 Common Labor 4 Tools Set	400.000	460.000	430.000	0.080
130 111-0750	Air supported warehouse, 340 gram reinforced vinyl fabric, sewn seams, accordion door, including liner 300 SQM		0.125 Labor Foreman 4 Common Labor 2 Tools Set	200.000	230.000	215.000	0.080
130 111-0850	Air supported warehouse, 340 gram reinforced vinyl fabric, sewn seams, accordion door, including liner over 1000 SQM		0.25 Labor Foreman 8 Common Labor 4 Tools Set	350.000	403.000	376.500	0.091
<b>130 250</b>	<b>INTEGRATED CEILINGS</b>						
<b>130 251</b>	<b>INTEGRATED CEILINGS</b>						
130 251-0100	Integrated lighting ceilings, acoustical, luminaire, with connections, 1.5 m x 1.5 m modules, 50% lighted	SQM	0.125 Labor Foreman 1.000 Carpenter 1.000 Helper 0.500 Electrician 0.500 Sheet metal worker 1.000 Tools Set	5.500	6.000	5.750	1.455
130 251-0200	Integrated lighting ceilings, acoustical, luminaire, with connections, 1.5 m x 1.5 m modules, 100% lighted			3.000	3.000	3.000	2.667
130 251-1640	Integrated ceiling, grid sys. & tile, flat profile, 1.5 m x 1.5 m mod., 50% lighted, mineral fiber panels			50.000	58.000	54.000	0.160
130 251-1640	Integrated ceiling, grid sys. & tile only, flat profile, 1.5 m x 1.5 m mod., 100% lighted, mineral fiber panels			50.000	58.000	54.000	0.000
130 251-1660	Integrated vaulted ceiling, grid sys. & tile only, flat profile, 1.5 m x 1.5 m mod., 50% lighted, glass fiber panels			50.000	58.000	54.000	0.160
<b>130 300</b>	<b>SPECIAL PURPOSE ROOMS</b>						
<b>130 305</b>	<b>DARKROOMS</b>						
130 305-0010	Darkrooms shell, complete lead lining without door, 6 SQM, 2.4 m high	SQM	0.125 Labor Foreman 2.000 Carpenters 2.000 Tools Set	8.500	10.000	9.250	1.882
130 305-0100	Darkrooms shell, complete lead lining without door, 6 SQM, 3.6 m high			4.250	5.000	4.625	3.765
130 305-0500	Darkrooms shell, complete with door, 11.15 SQM floor, 2438 mm high						
130 305-0600	Darkrooms shell, complete with door, 11.15 SQM floor, 3658 mm high						
130 305-0800	Darkrooms shell, complete lead lining without door, 22 SQM floor, 2.4 m high			8.000	9.000	8.500	2.000
130 305-0900	Darkrooms shell, complete lead lining without door, 22 SQM floor, 3.6 m high			4.000	5.000	4.500	4.000
<b>130 320</b>	<b>ATHLETIC ROOMS</b>						
<b>130 321</b>	<b>SPORT COURT</b>						
130 321-0010	Sport court, floors, no. 2 & better maple, 20 mm thick	SQM	0.125 Labor Foreman 3.000 Carpenters 2.000 Tools Set	10.000	12.000	11.000	1.600
130 321-0100	Sport court, walls, laminated plastic bonded to galv. steel studs			10.000	12.000	11.000	1.600
130 321-0470	Squash court, indoor, walls only, laminated plastic bonded to galv. steel studs			10.000	12.000	11.000	1.600
<b>130 340</b>	<b>AUDIOMETRIC ROOMS</b>						
<b>130 341</b>	<b>AUDIOMETRIC ROOMS</b>						
130 341-0010	Audiometric rooms, under 46 SQM surface	SQM	0.125 Labor Foreman 4.000 Carpenters 2.000 Tools Set	6.500	7.000	6.750	2.462
130 341-0100	Audiometric rooms, over 46 SQM surface			8.000	9.000	8.500	2.000
<b>130 360</b>	<b>CLEAN ROOMS</b>						
<b>130 361</b>	<b>CLEAN ROOM</b>						
130 361-3000	Clean room ceiling panel, vinyl coated foil on mineral substrate, sealed & non-perforated	SQM	0.125 Labor Foreman 1.000 Carpenter 1.000 Helper 1.000 Tools Set	6.000	7.000	6.500	1.333
130 361-6000	High efficiency particulate air filter 0.6 m x 1.2m, 76 mm to 150 mm deep, beveled frame	EA		4.000	5.000	4.500	2.000
<b>130 380</b>	<b>COLD STORAGE ROOMS</b>						
<b>130 381</b>	<b>REFRIGERATION</b>						
130 381-1000	Doors.						
	See division 083251						
130 381-2500	Cold storage room finishes, 2 coat portland cement plaster, 13 mm thick with galvanized reinforcing mesh	SQM	0.125 Labor Foreman 0.125 Lather 1.000 Mason 1.000 Helper 1.000 Grouting Mixer	4.000	5.000	4.500	2.000

**DIVISION 13 : SPECIAL CONSTRUCTION**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
130 381-2700	Cold storage room finishes, 5 mm thick latex cement		0.125 Labor Foreman 1.000 Plasterer 1.000 Helper 1.000 Tools Set	6.000	7.000	6.500	1.333
130 381-2900	Cold storage room finishes, glass cloth reinforced ceilings		"	45.000	52.000	48.500	0.178
130 381-3100	Cold storage room finishes, fiber glass panels, 3 mm thick		0.125 Labor Foreman 1.000 Carpenter 1.000 Helper 1.000 Tools Set	12.000	14.000	13.000	0.667
130 381-3200	Cold storage room finishes, polystyrene, plastic finish ceiling 100 mm thick		"	24.000	28.000	26.000	0.333
130 381-4900	Cold storage room, partitions, galvanized sandwich panels, 100 mm thick, aluminum or fiberglass	SQM	0.125 Labor Foreman 2.000 Carpenter 1.000 Helper 1.000 Tools Set	24.000	28.000	26.000	0.333
130 381-5200	Cold storage room, prefab walk-in, 2.2 m high, aluminum, including door, floors, partitions & refrigeration, 1.8 m x 1.8 m outside dimensions nominal			4.000	5.000	4.500	2.000
130 381-5500	Cold storage room, prefab walk-in, 2.2 m high, aluminum, including door & floors, partitions & refrigeration, 3 m x 3 m outside dimensions nominal			5.500	6.000	5.750	1.455
130 381-5700	Cold storage room, prefab walk-in, 2.2 m high, aluminum, including door floors, partitions & refrigeration, 3.6 m x 4.2 m outside dimensions nominal			7.500	9.000	8.250	1.067
130 381-5800	Cold storage room, prefab walk-in, 2.2 m high, aluminum, including door floors, partitions & refrigeration, 3.6 m x 6 m outside dimensions nominal			7.500	9.000	8.250	1.067
130 381-6600	Cold storage room shelving plated on galvanized steel wire			30.000	35.000	32.500	0.267
130 381-7500	Cold storage room, for air curtain doors, see division 083-722						
<b>130 520</b>	<b>SAUNAS</b>						
<b>130 521</b>	<b>SAUNA</b>						
130 521-0010	Sauna prefabricated including heater & controls, 2.1 m H, 1.8 m x 1.2 m cedar on cedar	EA	0.125 Labor Foreman 2.000 Carpenters 1.000 Laborer 0.500 Electrician 1.000 Tools Set	2.000	2.000	2.000	4.000
130 521-0400	Sauna prefabricated including heater & controls, 2.1 m H, 1.8 m x 1.5 m cedar on paneling			1.800	2.000	1.900	4.444
130 521-0800	Sauna prefabricated including heater & controls, 2.1 m H, 1.8 m x 2.75 m cedar on paneling			1.500	2.000	1.750	5.333
130 521-1000	Sauna prefabricated including heater & controls, 2.1 m H, 2.44 m x 3.6 m cedar on cedar			1.000	1.000	1.000	8.000
130 521-1400	Sauna prefabricated including heater & controls, 2.1 m H, 2.44 m x 3 m cedar on paneling			1.200	1.000	1.100	6.667
130 521-1600	Sauna prefabricated including heater & controls, 2.1 m H, 3 m x 3.6 m cedar on paneling			1.000	1.000	1.000	8.000
130 521-1700	Sauna, door only, cedar, 610 mm x 1800 mm with tempered insulated glass window		0.125 Labor Foreman 2.000 Carpenters 1.000 Helper 1.000 Tools Set	2.500	3.000	2.750	3.200
130 521-3000	Sauna, heaters only, floor standing to 28 CUM, room size 16 kW with controls		0.125 Labor Foreman 1.000 Electrician 1.000 Helper 1.000 Tools Set	2.500	3.000	2.750	3.200
<b>130 540</b>	<b>STEAM BATHS</b>						
<b>130 541</b>	<b>STEAM BATH</b>						
130 541-0010	Steam bath heater, including timer & head, single, to 3.9 CUM	EA	0.125 Labor Foreman 1.000 Plumber 1.000 Helper 1.000 Tools Set	0.850	1.000	0.925	9.412
130 541-0500	Steam bath heater, including timer & head, single, to 8.4 CUM			0.750	1.000	0.875	10.667
130 541-1000	Steam bath heater, commercial, with blow-down assembly, to 22 CUM			0.600	1.000	0.800	13.333
130 541-1000	Steam bath heater, commercial, with blow-down assembly, to 22 CUM			0.600	1.000	0.800	13.333
<b>130 810</b>	<b>ACOUSTICAL ENCLOSURES</b>						
<b>130 811</b>	<b>ACOUSTICAL</b>						
130 811-0020	Acoustical enclosure, 100 mm thick wall and ceiling panels 51 kg/SQM, up to 3.6 m span	SQM	0.125 Labor Foreman 3.000 Carpenters 1.000 Common laborer 2.000 Tools Set	4.000	5.000	4.500	4.000
130 811-0400	Acoustical reverb-chamber, 100 mm thick, parallel walls, complete			3.750	4.000	3.875	4.267
130 811-0700	Acoustical reverb-chamber, 100 mm thick, skewed walls, parallel roof, complete			2.850	3.000	2.925	5.614
130 811-0900	Acoustical, sound-absorbing panels, painted metal, 762 mm x 2438 mm, up to 100 SQM			20.000	23.000	21.500	0.800
130 811-1100	Acoustical, sound-absorbing panels, painted metal, 762 mm x 2438 mm, over 100 SQM			22.000	25.000	23.500	0.722
130 811-3100	Acoustical audio masking system, including speakers, amplification and signal generator			20.000	23.000	21.500	0.800
130 811-1150	Acoustical, sound-absorbing panels, perforated metal, over 46 SQM, music rooms			20.000	23.000	21.500	0.800
130 811-3200	Acoustical audio masking system, including speakers, amplification and signal generator, ceiling mounted up to 500 m2		0.125 Labor Foreman 2.000 Electricians 1.000 Helper 1.000 Tools Set	160.000	184.000	172.000	0.050



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CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
130 811-3200	Acoustical audio masking system, including speakers, amplification and signal generator, ceiling mounted more than 500 m2			200.000	230.000	215.000	0.040
130 811-3400	Acoustical audio masking system, including speakers, amplification and signal generator, plenum mounted, more than 500 m2			300.000	345.000	322.500	0.027
<b>130 910</b>	<b>RADIATION PROTECTION</b>						
<b>130 911</b>	<b>SHIELDING LEAD</b>						
130 911-0100	Shielding lead, laminated lead in wood doors, 2 mm thick, no hardware		1 Skilled Labor 1 Helper				
130 911-0200	Shielding, lining door frame, 2 mm thick lead, prepared to receive hardware	EA	0.125 Skilled Foreman 1.000 Lather 1.000 Helper 1.000 Tools Set	1.750	2.000	1.875	4.571
130 911-0300	Shielding, sheets, 2 mm thick lead	SQM	0.125 Skilled Foreman 2.000 Lather 1.000 Helper 2.000 Tools Set	9.000	10.000	9.500	1.778
130 911-0400	Shielding, sheets, 3 mm thick lead	SQM	0.125 Skilled Foreman 2.000 Lather 1.000 Helper 2.000 Tools Set	8.000	9.000	8.500	2.000
130 911-0600	Shielding glass, 6 mm thick lead, 300 mm x 400 mm	EA		9.000	10.000	9.500	1.778
130 911-0700	Shielding glass, 6 mm thick lead, 610 mm x 910 mm			6.000	7.000	6.500	2.667
130 911-0800	Shielding glass, 6 mm thick lead, 910 mm x 1525 mm			1.000	1.000	1.000	16.000
130 911-0850	Shielding window frame, 2 mm thick lead, 910 mm x 1525 mm			1.000	1.000	1.000	16.000
130 911-0900	Shielding gypsum board, 16 mm thick with 2 mm lead	SQM		11.000	13.000	12.000	1.455
130 911-0910	Shielding gypsum board, 16 mm thick with 3 mm lead			9.500	11.000	10.250	1.684
130 911-0930	Shielding gypsum board, 16 mm thick with 0.8 mm lead			15.000	17.000	16.000	1.067
130 911-1210	Shielding protection, X-ray room, average radiography or fluoroscopy room of 2.1 wall height & upto 28 SQM size, 2 mm lead, minimum			7.000	8.000	7.500	2.286
130 911-1900	Shielding protection, deep therapy, X-ray room 250 KV capacity, of 2.1 wall height & upto 28 SQM size, 6 mm lead, minimum			7.000	8.000	7.500	2.286
130 911-2010	Shielding, X-ray viewing panels, clear lead plastic 7 mm thick with 0.3 mm lead thick		0.125 Skilled Foreman 1.000 Skilled Worker 1.000 Common laborer 1.000 Tools Set	9.000	10.000	9.500	0.889
130 911-2040	Shielding, X-ray viewing panels, clear lead plastic 22 mm thick with 1.0 mm lead thick			3.000	3.000	3.000	2.667
130 911-2050	Shielding, X-ray viewing panels, clear lead plastic 35 mm thick with 1.0 mm lead thick			2.000	2.000	2.000	4.000
130 911-2060	Shielding, X-ray viewing panels, clear lead plastic 46 mm thick with 2.0 mm lead thick			1.500	2.000	1.750	5.333
130 911-7000	Shielding, X-ray barriers, mobile, mounted within framework with casters on bottom, clear lead plastic window panels on upper portion, opaque on lower including framework						
130 911-4020	Shielded, X-ray modular steel barriers with window, framed, floor or wall or ceiling mounted, supported, 0.9 m wide, 2.1 m high, 1 section, 0.5 mm leaded	EA		4.000	5.000	4.500	2.000
130 911-4050	Shielded, X-ray modular steel barriers with window, framed, floor or wall or ceiling mounted, supported, 0.9 m wide, 2.1 m high, 1 section, 1.5 mm leaded			3.000	3.000	3.000	2.667
130 911-4070	Shielded, X-ray modular steel barriers with window, framed, floor or wall or ceiling mounted, supported, 1.8 m wide, 2.1 m high, 2 section, 0.5 mm leaded			3.000	3.000	3.000	2.667
130 911-4090	Shielded, X-ray modular steel barriers with window, framed, floor or wall or ceiling mounted, supported, 1.8 m wide, 2.1 m high, 2 section, 1.0 mm leaded			2.600	3.000	2.800	3.077
130 911-5000	Shielded, X-ray modular steel barriers with window, framed, floor or wall or ceiling mounted, supported, 1.8 m wide, 2.1 m high, 2 section, 1.5 mm leaded			2.350	3.000	2.675	3.404
130 911-5040	Shielded, X-ray modular steel barriers with window, framed, floor or wall or ceiling mounted, supported, 2.7 m wide, 2.1 m high, 3 section, 1.0 mm leaded			2.000	2.000	2.000	4.000
130 911-5050	Shielded, X-ray modular steel barriers with window, framed, floor or wall or ceiling mounted, supported, 2.7 m wide, 2.1 m high, 3 section, 1.5 mm leaded			1.750	2.000	1.875	4.571
<b>130 912</b>	<b>SHIELDING, RADIO FREQUENCY</b>						
130 912-0020	Radio frequency shielding, prefabricated or screen-type copper or steel, average	EA	0.125 Skilled Foreman 2.000 Carpenters 1.000 Helper 2.000 Tools Set	10.000	12.000	11.000	1.600
<b>131</b>	<b>PRE-ENG. STRUCTURES, POOLS &amp; ICE RINKS</b>						
<b>131 200</b>	<b>PRE-ENG. STRUCTURES</b>						
<b>131 202</b>	<b>DOMES</b>						
131 202-0600	Domes revolving aluminum, electric drive, for astronomy observation, stock units 3048 mm diameter, 363 kg, dome & shell base		2 Carpenters				
131 202-1200	Domes revolving aluminum, electric drive, for astronomy observation, stock units 7315 mm diameter, 2041 kg, dome & shell base						
131 202-1600	Bulk storage dome, shell only, dual radius hemisphere, arch, steel framing, corrugated steel covering 40 m diameter	SQM Floor	1 Struct. steel foreman 4 Struct. steel workers 1 Equip. Oper (crane) 2 Common Laborers 1 Crane, 82 metric ton	40.000	46.000	43.000	0.200



**DIVISION 13 : SPECIAL CONSTRUCTION**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
131 202-2000	Bulk storage dome, shell, steel framing, plywood & asphalt shingle covering 15 m diameter		1 Skilled Foreman 2 Struct. steel workers 2 Carpenters 1 Equip. Oper. (crane) 2 Common Laborers 2 Power Tools 1 Hyd. crane, 11 metric ton	145,000	167,000	156,000	0.166
131 202-2200	Bulk storage dome covering, plywood, asphalt shingles, 22 m diameter			125,000	144,000	134,500	0.192
131 203-2300	Geodesic dome, shell only aluminum framed, aluminum closure panels 98 m diameter						0.000
131 203-2400	Geodesic dome, shell only aluminum framed, aluminum closure panels 126 m diameter						0.000
131 203-2800	Geodesic dome, shell only aluminum framed, fiberglass sandwich panel closure 2 m diameter						0.000
131 203-2900	Geodesic dome, shell only aluminum framed, fiberglass sandwich panel closure 9 m diameter						0.000
131 202-4000	Dome shell, aluminium framing, plexiglass closure panels, 12 m diameter			30,000	35,000	32,500	0.800
131 202-4000	Dome shell, aluminium framing, aluminium closure panels, 12 m diameter			20,000	23,000	21,500	1.200
131 202-4000	Dome shell, aluminium framing, fiberglass sandwich closure panels, 2 m diameter		0.125 Skilled Foreman 2.000 Carpenters 1.000 Common laborer 2.000 Power tools	12,000	14,000	13,000	1.333
131 202-4000	Dome shell, aluminium framing, fiberglass sandwich closure panels, 9 m diameter			30,000	35,000	32,500	0.533
131 205-0800	Silos steel, factory fab., epoxy lined, average						
131 207-0460	Rigid steel or alum. frame, vinyl coated polyester fabric shell, 37 m clear span, not incl. foundations or floors	SQM Floor					
131 207-0470	Rigid steel or alum. frame, vinyl coated polyester fabric shell, 61 m clear span, not incl. foundations or floors	SQM Floor					
131 207-0500	Roll-up door, 3658 mm x 4267 mm	SQM Floor	1 Carpenter 1 Carpenter Helper				
<b>131 210</b>	<b>PRE-ENGINEERED BUILDINGS</b>						
<b>131 211</b>	<b>HANGARS</b>						
131 211-0110	Hangars prefabricated steel T hangars, 6 m high Galv. steel roof & walls, incl. electric bi-folding doors, not including floors or foundations average	SQM SURFACE AREA	1 Struct. steel foreman 4 Struct. steel workers 1 Equip. Oper. (crane) 2 Common Laborers 1 Crane, 52 metric ton	90,000	104,000	97,000	0.089
131 211-2000	Hangars prefabricated steel, circular type, steel frame, plastic skin, electric door including foundations, 24 m diameter, average			45,000	52,000	48,500	0.178
<b>131 212</b>	<b>PRE-ENGINEERED STEEL BUILDINGS</b>						
131 212-0025	Pre-engineered steel building shell only, 26 ga. colored roofing & siding, average	SQM	1 Struct. steel foreman 4 Struct. steel workers 1 Equip. Oper. (crane) 2 Common Laborers 1 Crane, 52 metric ton	115,000	132,000	123,500	0.070
131 212-0100	Pre-engineered steel building rigid, clear span frame, 26 ga. colored roofing and siding 10 m wide, 4.25 m eave height, 2400 m2 floor area			115,000	132,000	123,500	0.070
131 212-0500	Pre-engineered steel building rigid, clear span frame, 26 ga. colored roofing and siding 12 m wide, 6 m eave height, 2400 m2 floor area			70,000	81,000	75,500	0.114
131 212-0700	Pre-engineered steel building rigid, clear span frame, 26 ga. colored roofing and siding 15 m wide, 4.25 m eave height, 2400 m2 floor area			115,000	132,000	123,500	0.070
131 212-1100	Pre-engineered steel building rigid, clear span frame, 26 ga. colored roofing and siding 24 m wide, 7.2 m eave height, 2400 m2 floor area			70,000	81,000	75,500	0.114
131 212-1400	Pre-engineered steel building rigid, clear span tapered beam frame, 26 ga. colored roofing and siding 10 m wide, 4.25 m eave height, 2400 m2 floor area			115,000	132,000	123,500	0.070
131 212-2000	Pre-engineered steel building, rigid clear span tapered beam frame, 26 ga. colored roofing and siding 12 m wide, 6 m eave height, 2400 m2 floor area			70,000	81,000	75,500	0.114
131 212-2100	Pre-engineered steel building rigid, clear span tapered beam frame, 26 ga. colored roofing and siding 15 m wide, 6 m eave height, 2400 m2 floor area			70,000	81,000	75,500	0.114
131 212-2500	Pre-engineered building, 3 post frame per width, 12 m span, 26 ga. roofing and siding 24 m. wide, 4.2 m eave height, 2400 m2 floor area			100,000	115,000	107,500	0.080
131 212-2800	Pre-engineered building, 3 post frame per width, 15 m span, 26 ga. roofing and siding 30 m. wide, 6 m eave height, 2400 m2 floor area			65,000	75,000	70,000	0.123
131 212-2900	Pre-engineered building, single post frame, 26 ga. roofing and siding 24 m. wide, 7.3 m eave height						
131 212-3400	Pre-engineered building, 3 post frame per width, 18 m span, 26 ga. roofing and siding 36 m. wide, 4.25 m eave height, 2400 m2 floor area			100,000	115,000	107,500	0.080
131 212-3600	Pre-engineered building, 3 post frame per width, 18 m span, 26 ga. roofing and siding 36 m. wide, 6 m eave height, 2400 m2 floor area			65,000	75,000	70,000	0.123
131 212-3700	Pre-engineered building, single post frame, 26 ga. roofing and siding 36 m. wide, 7 m eave height						
131 212-3800	Pre-engineered building, double post frame, 26 ga. roofing and siding 45 m. wide, 4.25 m eave height						
131 212-4100	Pre-engineered building, 4 post frame per width, 15 m span, 26 ga. roofing and siding 45 m. wide, 6 m eave height, 2400 m2 floor area			65,000	75,000	70,000	0.123
131 212-4200	Pre-engineered building, double post frame, 26 ga. roofing and siding 45 m. wide, 7 m eave height						
131 212-5500	Pre-engineered entrance canopy, incl. frame, 1.2 m x 1.2 m			25,000	29,000	27,000	0.320
131 212-5550	Pre-engineered entrance canopy, incl. frame, 1.2 m x 2.4 m			40,000	46,000	43,000	0.200



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CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
131 212-5700	Pre-engineered doors, hollow metal self-framing, incl. butts, lockset and trim, single leaf, 910 mm x 2100 mm, economy	OPENING	0.125 Skilled Foreman 2.000 Structural steel workers 1.000 Common Laborer 1.000 Tools Set	5.000	6.000	5.500	1.600
131 212-5950	Pre-engineered doors, hollow metal self-framing, incl. butts, lockset and trim, single leaf, 1.8 m x 2.4 m, economy	..		2.500	3.000	2.750	3.200
131 212-6050	Pre-engineered, framing only, for openings, 910 mm x 2100 mm						
131 212-6100	Pre-engineered, framing only, for openings, 3000 mm x 3000 mm						
131 212-6250	Pre-engineered, flashings, 26 ga., corner or eave						
131 212-6550	Gutter, eave type, 26 ga	LM		40.000	46.000	43.000	0.200
131 212-8200	Skylight, fiberglass panels upto 3 SQM	SQM	1 Welder Foreman 1 Welder 1 Laborer 1 Equip. Oper. (light) 1 Gas welding machine	20.000	23.000	21.500	0.400
131 212-8250	Skylight, fiberglass panels over 3 SQM	SQM	..	25.000	29.000	27.000	0.320
131 212-8400	Framed roof vents, circular with damper, birdscreen and operator hardware, painted 26 ga., 300 mm diameter	EA	0.125 Skilled Foreman 1.000 Structural Steel Worker 1.000 Helper 1.000 Tools Set	3.000	3.000	3.000	2.667
131 212-8450	Framed roof vents, circular with damper, birdscreen and operator hardware, painted 26 ga., 500 mm diameter			2.000	2.000	2.000	4.000
131 212-8500	Framed roof vents, circular with damper, birdscreen and operator hardware, painted 24 ga., 600 mm diameter			2.000	2.000	2.000	4.000
<b>131 230</b>	<b>GREENHOUSES</b>						
<b>131 231</b>	<b>GREENHOUSE</b>						
131 231-0300	Greenhouse, free standing, size 2.6 m long, 2.2 m wide, 2.44m high	SQM Floor	2 Carpenters 1 Helper	4.000	5.000	4.500	0.000
131 231-0700	Greenhouse shell only, 5 m long, 3.2 m wide						
131 231-0400	Greenhouse, free standing, size 2.6 m long, 3.2 m wide, 2.44m high			6.000	7.000	6.500	0.000
131 231-0700	Greenhouse, free standing, size 2.6 m long, 5.1 m wide, 2.44m high			12.000	14.000	13.000	0.000
<b>131 244</b>	<b>GARDEN HOUSE</b>						
131 244-0100	Garden house, prefabricated without floor or foundation 2.5 m long, 5 m wide	SQM Floor	2 Carpenters 2 Power tools	12.000	14.000	13.000	0.000
<b>131 245</b>	<b>KIOSKS</b>						
131 245-0010	Prefabricated kiosk, round, 1.5 m diameter, 2.4 m high, 6 mm fiberglass wall	EA	2 Skilled Workers 1 Helper	4.000	5.000	4.500	0.000
131 245-0100	Prefabricated kiosk, round, 1.5 m diameter, 2.4 m high, 25 mm insulated, double wall fiberglass			4.000	5.000	4.500	0.000
131 245-0100	Prefabricated kiosk, rectangular, 1.5 m x 2.7 m x 2.3 m, 25 mm insulated double wall, fiberglass			4.000	5.000	4.500	0.000
<b>131 247</b>	<b>PORTABLE BOOTHS</b>						
131 247-0300	Prefabricated, booth, aluminum with doors, windows, ext. roof lights wiring & insulation, 2.8 SQM, 2.4 m high, average	EA	2 Skilled Workers 1 Helper	4.000	5.000	4.500	0.000
131 247-1200	Prefabricated ticket booth, galv. steel, not incl. foundations, 1.2 m x 1.8 m average	..	..	4.000	5.000	4.500	0.000
<b>131 250</b>	<b>GRANDSTANDS / BLEACHERS</b>						
<b>131 251</b>	<b>GRANDSTANDS</b>						
131 251-0100	Grandstand, no foundation, steel understructure with precast concrete closed deck average	SEAT	1 Struc. steel foreman 4 Struc. steel workers 1 Equip. Oper. (crane) 1 Equip. Oper. roller 1 Crane, 82 metric ton	8.000	9.000	8.500	1.000
131 251-0300	Grandstand, steel deck at framing, average						
<b>131 520</b>	<b>SWIMMING POOLS</b>						
<b>131 521</b>	<b>SWIMMING POOL ENCLOSURE</b>						
131 521-0200	Swimming pool enclosure, translucent, free standing, not including foundations, heat or light, average	SQM	2 Carpenters 1 Helper	8.000	9.000	8.500	1.000
<b>131 523</b>	<b>SWIMMING POOL EQUIPMENT</b>						
131 523-0300	Swimming pool, diving stand, stainless steel, 3 meter	EA	2 Carpenters 1 Helper	0.250	0.500	0.375	32.000
131 523-0600	Swimming pool, diving board 5 m long			2.000	2.000	2.000	4.000
131 523-0900	Swimming pool filter system, sand or diatomite type, including pump 85 GPM & chlorination system, pool size 75 SQM			1.000	1.000	1.000	0.000
131 523-1100	Swimming pool, gutter system, stainless steel, with grating, including supply and drainage system	LM	1 Welder Foreman 1 Welder 1 Equip. Oper. (light) 1 Gas welding machine	4.000	5.000	4.500	2.000
131 523-1200	Swimming pool, ladders, heavy duty, stainless steel, 4 tread	EA	2 Carpenters 1 Helper	4.000	5.000	4.500	0.000
131 523-1800	Swimming pool, lifeguard chair, stainless steel, fixed		..	2.000	2.000	2.000	0.000
131 523-2100	Swimming pool, lights, underwater, 12V, with transformer		1 Electrician 1 Helper	5.000	6.000	5.500	0.000
131 523-2800	Swimming pool heaters,						

See division 155150

DIVISION 13 : SPECIAL CONSTRUCTION							
CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
131 523-3300	Swimming pool slides, fiberglass, aluminum handrails & ladder, 1.8 m straight	EA	2 Carpenters 1 Helper	1.500	2.000	1.750	0.000
131 523-3400	Swimming pool slides, fiberglass, aluminum handrails & ladder, 3.2 m curved unit	"	"	0.850	1.000	0.925	0.000
<b>131 525 SWIMMING POOLS</b>							
131 525-0600	Swimming pool gunite bottom and sides, white plaster finish	SQM Surt.	1 Foreman 3 Laborers 2 Cement Finisher 1 Grout pump with hose & nozzle	10.000	12.000	11.000	0.800
131 525-0810	Swimming pool, concrete bottom and sides tile finished	"	1 Foreman 4 Tiers 4 Laborers 1 Cement Finisher 5 Rodman (rent) 5 Equip. Oper. (med) .5 F.E. Ldr., T.M., 1.91 CUM	6.000	7.000	6.500	0.667
<b>132 TANKS, TANK COVERS, FILTRATION EQUIPMENT</b>							
<b>132 050 GROUND STORAGE TANKS</b>							
<b>132 051 TANKS</b>							
132 051-3040	Steel, storage tank, above ground, including supports, coating fittings not including mat, pumps or piping, single wall, 2 CUM capacity	EA	1 Steamfitter 1 Steamfitter: Apprentice	3.500	4.000	3.750	0.000
132 051-3080	Steel, storage tank, above ground, including supports, coating, fittings, not including mat, pumps or piping, 4 CUM capacity	"	1 Steamfitter Foreman (in) 2 Steamfitters 1 Steam Apprentice 0.25 Crane Operator 0.25 Crane 11 ton	5.000	6.000	5.500	0.400
132 051-3140	Steel, storage tank, above ground, including supports, coating, fittings, not including mat, pumps or piping, 20 CUM capacity	"	"	2.400	3.000	2.700	0.633
132 051-3180	Steel, storage tank, above ground, including supports, coating, fittings, not including mat, pumps or piping, 100 CUM capacity	"	"	0.900	1.000	0.950	2.222
132 051-3330	Steel, storage tank, above ground, including supports, coating, fittings not including mat, pumps or piping, double wall, 8 CUM capacity	"	"	3.000	3.000	3.000	0.667
132 051-3360	Steel, storage tank, above ground, including supports, coating, fittings, not including mat, pumps or piping, double wall, 30 CUM capacity	"	"	1.500	2.000	1.750	1.333
132 051-3400	Steel above ground, storage tank, above ground, including supports, coating fittings not including mat, pumps or piping, double wall, 100 CUM capacity	"	"	0.800	1.000	0.900	2.500
<b>132 150 UNDERGROUND STORAGE TANKS</b>							
<b>132 151 TANKS</b>							
132 151-0240	Underground storage tank, fiberglass, single wall, not including excavation, hold down straps and manway, 8 CUM capacity	EA	1 Steamfitter Foreman (in) 2 Steamfitters 1 Steam Apprentice 0.25 Crane Operator 0.25 Crane 11 ton	2.000	2.000	2.000	1.000
132 151-0280	Underground storage tank, fiberglass, single wall, not including excavation, hold down straps and manway, 40 CUM capacity	"	"	0.500	1.000	0.750	4.000
132 151-0290	Underground storage tank, fiberglass, single wall, not including excavation, hold down straps and manway, 80 CUM capacity	"	"	0.300	0.500	0.400	6.667
132 151-5530	Underground storage tank, steel, not including excavation, hold down straps, pad, pumps & piping, 8 CUM capacity, 6 mm wall thickness	"	"	0.500	1.000	0.750	4.000
132 151-5580	Underground storage tank, steel, not including excavation, hold down straps, pad, pumps & piping, 80 CUM capacity, 8 mm wall thickness	"	"	0.500	1.000	0.750	4.000
132 151-5610	Underground storage tank, steel, not including excavation, hold down straps, pad, pumps & piping, 100 CUM capacity, 10 mm wall thickness	"	"	0.300	0.500	0.400	6.667
132 151-5630	Underground storage tank, steel, not including excavation, hold down straps, pad, pumps & piping, 150 CUM capacity, 10 mm wall thickness	"	"	0.200	0.500	0.350	10.000
<b>133 UTILITY CONTROL SYSTEMS</b>							
<b>133 300 POWER CONTROL SYSTEMS</b>							
133 311	RADIO TOWERS	See Div 169-120					

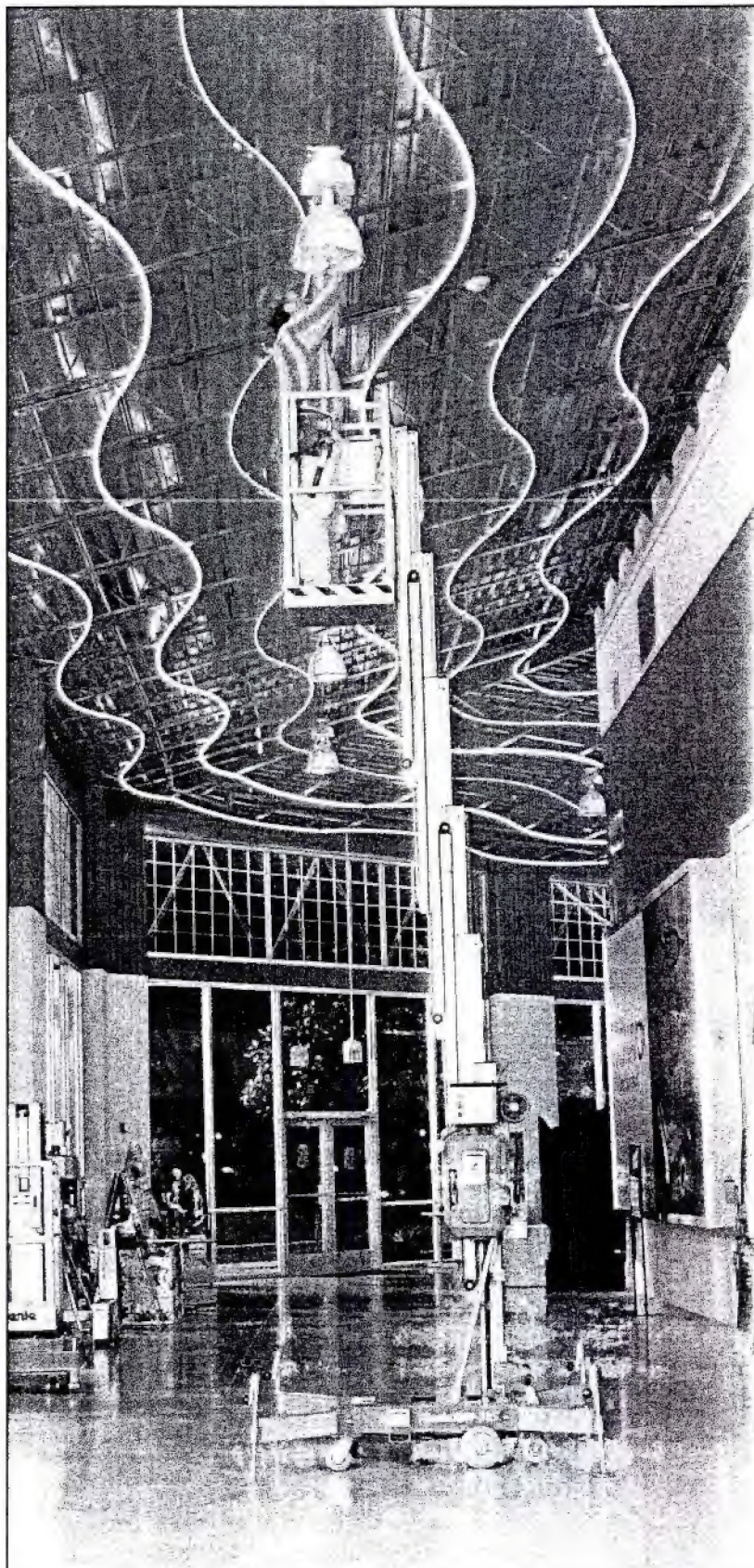


A decorative geometric pattern, resembling a complex tessellation of stars and polygons, is located in the top right corner of the page. The pattern is rendered in a light gray color against a darker gray background. The overall design is clean and professional, typical of a technical or architectural document.

# Division 14

## Conveying Systems



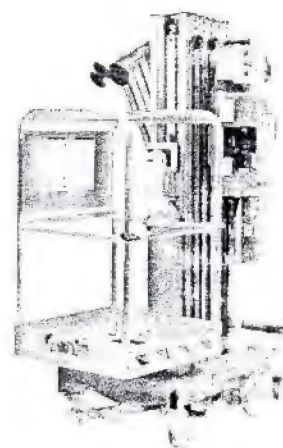


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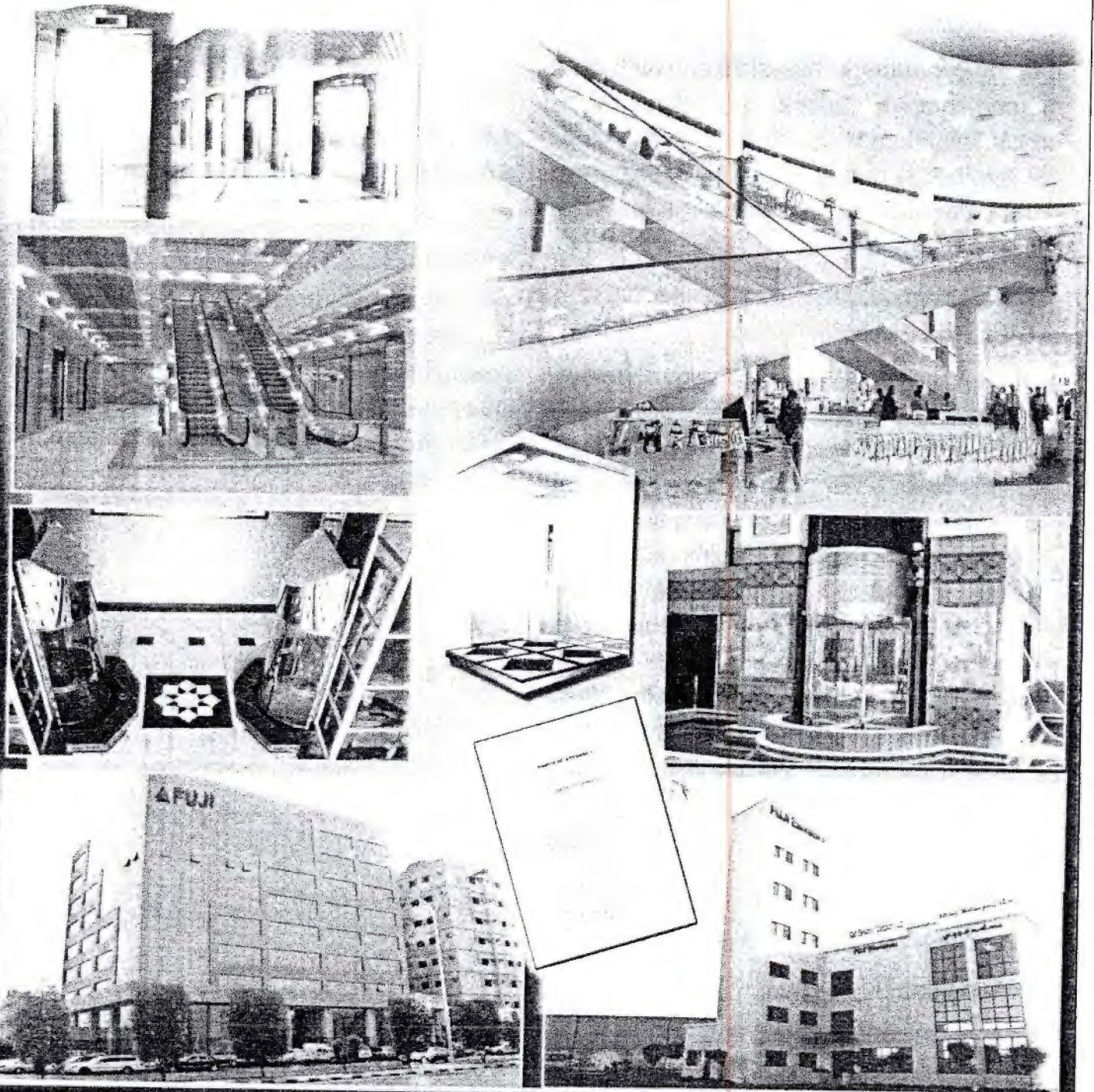


**شركة دار البناء الحديثة المحدودة**

المركز الرئيسي / هاتف ٠١١ ٤٠٤١٠١١ / فاكس ٠١١ ٤٠٢٤٨٩١ / المملكة العربية السعودية - الرياض



# **FUJI** QUALITY MOTION TO THE FUTURE



**Gulf Elevator & Escalator Company Ltd.**

**FUJI Elevator & Escalator**

Head Office P.O. Box 13099 Jeddah 21493 Tel.: 6080588 (8 lines) Fax: 6080897

Riyadh Branch: P.O. Box 63383 Riyadh 11516 Tel.: 4627059 (6 lines) Fax: 4626143

Al-Khobar Branch: Tel.: 03/ 8822700 Fax: 03/ 8875306

Al-Madinah Branch: Tel.: 8260115 - 8260127 - Fax: 8266122

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**FUJI**

**شركة الخليج للمصاعد والسلالم المحدودة**  
**مصاعد وسلالم قوجي**

المركز الرئيسي: ص. ب. ١٣٠٩٩ جدة ٢١٤٩٣ ت: ٦٠٨٠٥٨٨ (٨ خطوط) فاكس: ٦٠٨٠٨٩٧

فرع الرياض: ص. ب. ٦٣٣٨٣ الرياض ١١٥١٦ ت: ٤٦٢٧٠٥٩ (٦ خطوط) فاكس: ٤٦٢٦١٤٣

فرع الخبر: ص. ب. ٨٨٢٢٧٠٠ ت: ٠٣ / ٨٨٧٥٣٠٦ فاكس: ٠٣ / ٨٨٧٥٣٠٦

فرع المدينة المنورة: ص. ب. ٨٢٦٠١١٥ ت: ٨٢٦٠١٢٧ - ٨٢٦٠١٢٧ فاكس: ٨٢٦٦١٢٢

فرع مكة المكرمة: ص. ب. ٥٥٣٨١٣ ت: ٠٢ / ٥٢٧٣٦٨٧ - ٠٢ / ٥٢٧٣٦٨٩ فاكس: ٠٢ / ٥٢٧٣٦٨٩

Web site: [www.gulfelators.com](http://www.gulfelators.com) E-mail: [info@gulfelators.com](mailto:info@gulfelators.com)



## Division 14.. Conveying Systems..

### Estimating Tips: General

Many products in this division will require some type of support or blocking for installation not included with the item itself. Examples are supports for conveyors, attachment points for lifts and footings for hoists or cranes.

#### 141 Dumb-waiters.

#### 142 Elevators:

Dumb-waiters Elevators are estimated and purchased from manufacturers with a base unit price for standard features and added to this base unit price will be whatever options the owner or specifications require. Increased load capacity, additional vertical travel, additional stops, higher speed, and cab finish options are items to be considered. When developing an estimate for elevators, remember that some items needed by the installers may have to be included as part of the general contract. Examples are:

- shaftway.
- rail support brackets.
- machine room electrical supply.
- sill angles.
- electrical connections.
- pits.
- roof penthouse.
- pit ladders.

#### 143 Escalators:

Escalators are specialty items installed by

specialty contractors. There are numerous options associated with these items. For specific options contact a manufacturer or contractor.

#### 144 Lifts.

#### 146 Hoists & Cranes:

These products may require trained installers.

The general contractor might not have any choice as to who will perform the installation or when it will be performed. Long lead items are often required for these products, making early decisions in scheduling is necessary.



# **DIVISION 14: CONVEYING SYSTEMS**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
<b>141</b>	<b>DUMBWAITERS</b>						
<b>141 100</b>	<b>MANUAL DUMBWAITERS</b>						
<b>141 101</b>	<b>DUMBWAITERS:</b>						
141 101-0100	Manual dumbwaiter, 2 stops, average	EA	0.50 Elevator Forman 4.00 Elevator Constructors 1.00 Steel Structure Worker 2.00 Elevator apprentice 3.00 Hand Tools 1.00 Chain Winch	2.000	2.000	2.000	16.000
141 101-0300	Manual dumbwaiter, for each stop, add	STOP	"	2.000	2.000	2.000	16.000
<b>141 200</b>	<b>ELECTRIC DUMBWAITERS</b>						
<b>141 201</b>	<b>DUMBWAITERS:</b>						
141 201-0010	Electric dumbwaiters, 2 stops, average	EA	0.50 Elevator Forman 4.00 Elevator Constructors 1.00 Steel Structure Worker 2.00 Elevator apprentice 3.00 Hand Tools 1.00 Chain Winch	0.350	0.500	0.425	91.429
141 201-0600	Electric dumbwaiters, for each additional stop, add	STOP	"	1.500	2.000	1.750	21.333
<b>142</b>	<b>ELEVATORS</b>						
<b>142 010</b>	<b>ELEVATORS</b>						
<b>142 011</b>	<b>ELEVATORS</b>						
142 011-0600	Elevator freight, 2 story, hydraulic, 1360 kg capacity, 0.5m/second speed, average	EA	0.50 Elevator Forman 4.00 Elevator Constructors 1.00 Steel Structure Worker 2.00 Elevator apprentice 3.00 Hand Tools 1.00 Chain Winch	0.108	0.500	0.304	296.296
142 011-0700	Elevator freight, 2 story, hydraulic, 1800 kg capacity, 0.88 m/second speed, average			0.101	0.500	0.301	316.832
142 011-0750	Elevator freight, 3 story, hydraulic, 1800 kg capacity, 0.88 m/second speed, average			0.087	0.100	0.094	367.816
142 011-1000	Elevator freight, 6 story, hydraulic, 1360 kg capacity, 0.76 m/second speed, average			0.082	0.100	0.091	390.244
142 011-1100	Elevator freight, 6 story, hydraulic, 1800 kg capacity, 0.76 m/second speed, average			0.082	0.100	0.091	390.244
142 011-1120	Elevator freight, 6 story, hydraulic, 2000 kg capacity, 0.76 m/second speed, average			0.076	0.100	0.088	421.053
142 011-1200	Elevator freight, 6 story, hydraulic, 2700 kg capacity, 0.88 m/second speed, average			0.072	0.100	0.086	444.444
142 011-1700	Elevator freight, 6 story, hydraulic, 3000 kg capacity, 0.88 m/second speed, average			0.072	0.100	0.086	444.444
142 011-1820	Elevator freight, 6 story, hydraulic, 3600 kg capacity, 0.88 m/second speed, average			0.059	0.100	0.080	542.373
142 011-2500	Elevator freight, 6 story geared electric 1800 kg capacity, 2.0 m/second speed, average			0.090	0.100	0.095	355.556
142 011-2600	Elevator freight, 6 story geared electric 3000 kg capacity, 2 m/second speed, average			0.078	0.100	0.089	410.256
142 011-2700	Elevator freight, 6 story geared electric 4500 kg capacity, 1.5 m/second speed, average			0.066	0.100	0.083	484.848
142 011-2800	Elevator freight, 6 story geared electric 4500 kg capacity, 2 m/second speed, average			0.064	0.100	0.082	500.000
142 011-3500	Elevator freight, 10 story geared electric 1800 kg capacity, 1.5 m/second speed, average			0.078	0.100	0.089	410.256
142 011-3600	Elevator freight, 10 story geared electric 2700 kg capacity, 1.5 m/second speed, average			0.069	0.100	0.085	463.768
142 011-3700	Elevator freight, 10 story geared electric 3000 kg capacity, 2 m/second speed, average			0.068	0.100	0.084	470.588
142 011-3800	Elevator freight, 10 story geared electric 3600 kg capacity, 1.5 m/second speed, average			0.059	0.100	0.080	542.373
142 011-3900	Elevator freight, 10 story geared electric 4500 kg capacity, 1.2 m/second speed, average			0.057	0.100	0.079	561.404
142 011-4500	Elevator freight, 12 story geared electric 4500 kg capacity, 1.5 m/second speed, average			0.051	0.100	0.076	627.451
142 011-4620	Elevator freight, 14 story geared electric 4500 kg capacity, 2.0 m/second speed, average			0.049	0.100	0.075	653.061
142 011-5200	Elevator freight, 15 story geared electric 2200 kg capacity, 1.5 m/second speed, average			0.059	0.100	0.080	542.373
142 011-5800	Elevator freight, 16 story geared electric 2700 kg capacity, 2.0 m/second speed, average			0.060	0.100	0.080	533.333
142 011-5920	Elevator freight, 16 story geared electric 3600 kg capacity, 2.0 m/second speed, average			0.052	0.100	0.076	615.385
142 011-6400	Elevator freight, 20 story geared electric 3000 kg capacity, 2 m/second speed, average			0.047	0.100	0.074	680.851
142 011-6620	Elevator freight, 22 story geared electric 3600 kg capacity, 2 m/second speed, average			0.040	0.100	0.070	800.000
142 011-6700	Elevator freight, 24 story geared electric 4500 kg capacity, 2 m/second speed, average			0.037	0.100	0.069	864.865



# **DIVISION 14: CONVEYING SYSTEMS**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
142 011-7000	Elevator passenger, 3 story,hydraulic, 680 kg capacity, 0.63 m/second speed	EA	0.50 Elevator Foreman 4.00 Elevator Constructors 1.00 Steel Structure Worker 2.00 Elevator apprentice 3.00 Hand Tools 1.00 Chain Winch	0.090	0.100	0.095	355.556
142 011-7020	Elevator passenger, 3 story,hydraulic, 900 kg capacity, 0.88 m/second speed			0.085	0.100	0.093	376.471
142 011-7040	Elevator passenger, 3 story,hydraulic, 1100 kg capacity, 0.76 m/second speed			0.090	0.100	0.095	355.556
142 011-7060	Elevator passenger, 4 story,hydraulic, 1100 kg capacity, 0.88 m/second speed			0.081	0.100	0.091	395.062
142 011-7160	Elevator passenger, 5 story,hydraulic, 680 kg capacity, 0.5 m/second speed			0.091	0.100	0.091	395.062
142 011-7180	Elevator passenger, 6 story,hydraulic, 900 kg capacity, 0.635 m/second speed			0.077	0.100	0.089	415.584
142 011-7200	Elevator passenger, 5 story,hydraulic, 1100 kg capacity, 0.76 m/second speed			0.081	0.100	0.091	395.062
142 011-7260	Elevator passenger, 5 story,hydraulic, 1100 kg capacity, 0.88 m/second speed			0.077	0.100	0.089	415.584
142 011-7300	Elevator passenger, 6 story,hydraulic, 1100 kg capacity, 0.5 m/second speed			0.077	0.100	0.089	415.584
142 011-7320	Elevator passenger, 6 story,hydraulic, 1300 kg capacity, 0.88 m/second speed			0.074	0.100	0.087	432.432
142 011-7340	Elevator passenger, 7 story,hydraulic, 1800 kg capacity, 0.76 m/second speed			0.074	0.100	0.087	432.432
142 011-7400	Elevator passenger, 8 story,hydraulic, 2000 kg capacity, 0.88 m/second speed			0.068	0.100	0.084	470.588
142 011-7800	Elevator passenger, 10 story geared electric 970 kg capacity, 1.02 m/second speed,average			0.073	0.100	0.087	438.356
142 011-7900	Elevator passenger, 12 story geared electric 1100 kg capacity, 1.20 m/second speed,average			0.065	0.100	0.083	492.308
142 011-8000	Elevator passenger, 10 story geared electric 1360 kg capacity, 1.50 m/second speed,average			0.072	0.100	0.086	444.444
142 011-8060	Elevator passenger, 10 story geared electric 1800 kg capacity, 1.77 m/second speed,average			0.066	0.100	0.084	470.588
142 011-8100	Elevator passenger, 13 story geared electric 2000 kg capacity, 2.00 m second/speed,average			0.055	0.100	0.078	581.818
142 011-8120	Elevator passenger, 10 story geared electric 2200 kg capacity, 2.00 m second/speed,average			0.062	0.100	0.081	516.129
142 011-8340	Elevator passenger, 16 story geared electric 1800 kg capacity, 1.5 m/second speed,average			0.059	0.100	0.080	542.373
142 011-8380	Elevator passenger, 16 story geared electric 1800 kg capacity, 2 m/second speed,average			0.057	0.100	0.079	561.404
142 011-8400	Elevator passenger, 16 story geared electric 2200 kg capacity, 2 m/second speed,average			0.053	0.100	0.077	603.774
142 011-8440	Elevator passenger, 16 story geared electric 3200 kg capacity, 2 m/second speed,average			0.047	0.100	0.074	680.851
142 011-8500	Elevator passenger, 20 story geared electric 1800 kg capacity, 2 m/second speed,average			0.048	0.100	0.074	666.667
142 011-8700	Elevator passenger, 20 story geared electric 2200 kg capacity, 2 m/second speed,average			0.045	0.100	0.073	711.111
142 011-9000	Elevator passenger, 16 story gearless electric 1800 kg capacity, 2.50 m/second speed,average			0.052	0.100	0.076	615.385
142 011-9060	Elevator passenger, 16 story gearless electric 1800 kg capacity, 3.00 m/second speed,average			0.052	0.100	0.076	615.385
142 011-9120	Elevator passenger, 16 story gearless electric 2200 kg capacity, 3.50 m/second speed,average			0.048	0.100	0.074	666.667
142 011-9220	Elevator passenger, 16 story gearless electric 3200 kg capacity, 4.00 m/second speed,average			0.040	0.100	0.070	800.000
142 011-9500	Elevator passenger, 18 story gearless electric 1800 kg capacity, 3.00 m/second speed,average			0.049	0.100	0.075	653.061
142 011-9560	Elevator passenger, 20 story gearless electric 1800 kg capacity, 4.00 m/second speed,average			0.044	0.100	0.072	727.273
142 011-9600	Elevator passenger, 20 story gearless electric 2000 kg capacity, 3.50 m/second speed,average			0.041	0.100	0.071	780.486
142 011-9660	Elevator passenger, 20 story gearless electric 2000 kg capacity, 4.00 m/second speed average			0.041	0.100	0.071	780.486
142 011-9700	Elevator passenger, 20 story gearless electric 3200 kg capacity, 3.00 m/second speed,average			0.034	0.100	0.067	941.176
142 011-9740	Elevator passenger, 20 story gearless electric 2800 kg capacity, 3.50 m/second speed,average			0.039	0.100	0.070	820.513
142 011-9780	Elevator passenger, 20 story gearless electric 2800 kg capacity, 4.00 m/second speed,average			0.034	0.100	0.067	941.176
142 011-9860	Elevator passenger, 20 story gearless electric 2800 kg capacity, 5.00 m/second speed,average			0.031	0.100	0.066	1032.238
<b>143</b>	<b>MOVING STAIRS &amp; WALKS</b>						
<b>143 100</b>	<b>ESCALATORS</b>						
<b>143 101</b>	<b>ESCALATORS:</b>						



## DIVISION 14: CONVEYING SYSTEMS

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
143 101-0010	Escalators single unit, up or down, 3.00 m rise, 813 mm wide, stainless steel balustrade	EA	0.50 Elevator Foreman 4.00 Elevator Constructors 1.00 Steel Structure Worker 2.00 Elevator apprentice 3.00 Hand Tools 1.00 Chain Winch	0.067	0.100	0.084	358.209
143 101-0100	Escalators single unit, up or down, 4.50 m rise, 813 mm wide, stainless steel balustrade	EA	0.50 Elevator Foreman 4.00 Elevator Constructors 1.00 Steel Structure Worker 2.00 Elevator apprentice 3.00 Hand Tools 1.00 Chain Winch	0.092	0.100	0.096	260.870
143 101-0200	Escalators single unit, up or down, 6.00 m rise, 813 mm wide, stainless steel balustrade			0.075	0.100	0.088	320.000
143 101-0300	Escalators single unit, up or down, rise, 4.50 m rise, 813 mm wide, enameled steel balustrade			0.090	0.100	0.095	266.667
143 101-1000	Escalator, single unit, up or down, 3.00 rise, 1.20 m wide, enameled steel balustrade			0.089	0.100	0.095	269.663
143 101-1100	Escalator, single unit, up or down, 4.50 rise, 1.20 m wide, enameled steel balustrade			0.078	0.100	0.089	307.692
143 101-1200	Escalator, single unit, up or down, 6.00 rise, 1.20 m wide, enameled steel balustrade			0.065	0.100	0.083	389.231
143 101-1300	Escalator, single unit, up or down, 4.50 m, 1200 mm wide, enameled steel or glass balustrade			0.078	0.100	0.089	307.692
<b>143 200</b>	<b>MOVING WALKS</b>						
<b>143 201</b>	<b>MOVING RAMPS AND WALKS:</b>						
143 201-0010	Moving walk, 686 mm tread width, 50 m long.	LM	0.50 Elevator Foreman 4.00 Elevator Constructors 1.00 Steel Structure Worker 2.00 Elevator apprentice 3.00 Hand Tools 1.00 Chain Winch	3.250	4.000	3.625	7.385
143 201-0100	Moving walk, 686 mm tread width, 90 m long.			2.750	3.000	2.875	8.727
143 201-0140	Moving walk, 686 mm tread width, 150 m long.			2.500	3.000	2.750	9.600
143 201-0300	Moving walk, 1220 mm tread width, 20 m long			2.350	3.000	2.675	10.213
143 201-0360	Moving walk, 1220 mm tread width, 30 m long			2.000	2.000	2.000	12.000
143 201-0400	Moving walk, 1220 mm tread width walk, 100 m long			1.850	2.000	1.925	12.973
143 201-0600	Moving walk, ramp, 12 degree incline, 910 mm tread width, 12 meter long			2.600	3.000	2.800	9.231
143 201-0660	Moving walk, ramp, 12 degree incline, 910 mm tread width, 20 meter long			1.700	2.000	1.850	14.118
143 201-0700	Moving walk, ramp, 12 degree incline, 910 mm tread width, 27 meter long			1.600	2.000	1.800	15.000
143 201-0900	Moving walk, ramp, 12 degree incline, 1220 mm tread width, 6 meter long			1.300	1.000	1.150	18.462
143 201-0960	Moving walk, ramp, 12 degree incline, 1220 mm tread width, 12 meter long			1.820	2.000	1.910	13.187
143 201-1000	Moving walk, ramp, 12 degree incline, 1220 mm tread width, 21 m long			1.190	1.000	1.095	20.168
<b>144</b>	<b>LIFTS</b>						
<b>144 010</b>	<b>LIFTS</b>						
<b>144 015</b>	<b>CORRESPONDENCE &amp; PARCEL LIFTS: " SMALL CAPACITY LIFTS"</b>						
144 015-0100	Correspondence lift, 1 floor, 2 stops. 11.30 Kg capacity, electric	EA	0.25 Foreman 2.00 Elevator Workers 1.00 Common laborer 1.00 Hand tools 1.00 Chain winch	0.200	0.500	0.350	80.000
144 015-0100	Parcel lift, 508 mm x 508 mm, 1 floor, 2 stops, 45 Kg capacity, electric.	"	"	0.250	0.500	0.375	64.000
<b>145</b>	<b>MATERIAL HANDLING SYSTEMS</b>						
<b>145 500</b>	<b>CONVEYORS</b>						
<b>145 501</b>	<b>MATERIAL HANDLING:</b>						
145 501-0050	Conveyors, Gravity type, 50 mm rollers, 76 mm O.C., 3 m sections with 2 supports, 270 kg capacity, 460 mm wide	EA	0.25 Foreman 2.00 Elevator Workers 1.00 Elevator Worker Helper 2.00 Power Tools	2.500	3.000	2.750	6.400
145 501-0100	Conveyors, Gravity type, 50 mm rollers, 76 mm O.C., 3 m sections with 2 supports, 270 kg capacity, 600 mm wide			2.250	3.000	2.625	7.111
145 501-0150	Conveyors, Gravity type, 50 mm rollers, 76 mm O.C., 3 m sections with 2 supports, 600 kg capacity, 600 mm wide			1.800	2.000	1.900	8.889
145 501-0400	Conveyors, Center drive & take-up, horizontal belt, 0.3 m/s, 400 mm belt, 8 m long			0.600	1.000	0.800	26.667
145 501-0450	Conveyors, Center drive & take-up, horizontal belt, 0.3 m/s, 600 mm belt, 13 m long			0.500	1.000	0.750	32.000
145 501-0500	Conveyors, Center drive & take-up, horizontal belt, 0.3 m/s, 600 mm belt, 19 m long	LM		0.400	0.500	0.450	40.000
145 501-0620	Conveyor, Inclined belt, with horizontal loader and end idler assembly, 3 m rise, 8 m long, 460 mm wide belt.			0.400	0.500	0.450	40.000
145 501-0700	Conveyor, Inclined belt, with horizontal loader and end idler assembly, 3 m rise, 8 m long, 600 mm wide belt.			0.220	0.500	0.360	72.727
145 501-1210	Conveyor, Overhead, automatic powered chain type, 186 kg/m capacity			6.000	7.000	6.500	2.667

# **DIVISION 14: CONVEYING SYSTEMS**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
<b>145 504</b>	<b>VERTICAL CONVEYOR:</b>						
145 504-0100	Vertical Conveyor Automatic between floors, selective, 1 floor 4.5 m high. 2 stops, complete with electrical hook-up	EA	0.25 Foreman 2.00 Elevator Workers 1.00 Electrician 1.00 Elevator Worker Helper 2.00 Power Tools 1.00 Tools set 0.50 Winch	0.150	0.500	0.325	186.667
<b>145 600</b>	<b>CHUTES</b>						
<b>145 601</b>	<b>CHUTES:</b>						
145 601-0050	Chutes for liner or refuse, floor height 3.6 m, aluminized steel, 15 ga. or galvanized steel or stainless steel with sprinkler, size 450 mm diameter	FLOOR	0.25 Foreman 2.00 Sheet Metal Workers 1.00 Common Laborer 2.00 Power Tools	4.000	5.000	4.500	4.000
145 601-0200	Chutes for liner or refuse, floor height 3.6 m, aluminized steel, 16 ga. or galvanized steel or stainless steel with sprinkler, size 760 mm diameter	FLOOR		3.500	4.000	3.750	4.571
145 601-0300	Chutes for liner or refuse, floor height 3.6 m, aluminized steel, 16 ga. or galvanized steel or stainless steel with sprinkler, size 900 mm diameter	EA		3.000	3.000	3.000	5.333
145 601-1200	Chutes, linen bottom collector, aluminized steel or stainless steel			4.000	5.000	4.500	4.000
145 601-1500	Chutes, refuse bottom hopper, aluminized steel upto 900 mm diameter (36")			3.000	3.000	3.000	5.333
<b>145 800</b>	<b>TUBE SYSTEMS</b>						
<b>145 801</b>	<b>PNEUMATIC TUBE SYSTEM:</b>						
145 801-0100	Pneumatic tube system, single tube, 2 stations with blower, 76 mm diameter (3")	LM	0.25 Foreman 2.00 Steamfitter/Pipefitter 1.00 Common laborer 2.00 Power Tools	0.120	0.500	0.310	133.333
145 801-0300	Pneumatic tube system, single tube, 2 stations with blower, 100 mm diameter (4")			0.095	0.100	0.093	188.235
145 801-0900	Pneumatic tube system, twin tube, two stations with blower, conventional system, 100 mm diameter (4")			0.065	0.100	0.083	246.154
145 801-1000	Pneumatic tube system, twin tube, two stations with blower, conventional system, 100 mm x 180 mm oval			0.045	0.100	0.073	355.556
<b>146</b>	<b>HOISTS &amp; CRANES</b>						
<b>146 010</b>	<b>HOISTS &amp; CRANES</b>						
<b>146 011</b>	<b>MATERIAL HANDLING</b>						
146 011-2100	Overhead crane, Electric, horizontal, vertical movement, complete w / electrical connections, no rails or box beam. Capacity 2.70 Ton, 4.60 m lift	EA	0.25 Foreman 2.00 Struct. Steel Foreman 1.00 Electrician 2.00 Common laborer 1.00 Gas welding Machine 2.00 Power Tools 1.00 Winch	0.500	1.000	0.750	64.000
146 011-2120	Overhead crane, Electric, horizontal, vertical movement, complete w / electrical connections, no rails or box beam. Capacity 5.00 Ton., 4.6 m lift			0.450	1.000	0.725	71.111
146 011-2140	Overhead crane, Electric, horizontal, vertical movement, complete w / electrical connections, no rails or box beam. Capacity 7.50 Ton, 4.6 m lift			0.425	1.000	0.713	75.294
146 011-2160	Overhead crane, Electric, horizontal, vertical movement, complete w / electrical connections, no rails or box beam. Capacity 10.0 Ton, 4.6 m lift			0.400	1.000	0.700	80.000
<b>146 050</b>	<b>RAILS</b>						
<b>146 054</b>	<b>CRANE RAIL</b>						
146 054-0100	Overhead crane, box beam bridge without equipment	KG	0.25 Struct. Steel Foreman 3.00 Struct. Steel Workers 1.00 Common laborer 1.00 Power tool 1.00 Winch 1.00 Gas welding machine	2000.000	2300.000	2150.000	0.012
146 054-0200	Overhead crane running tracks only, 0.05 Kg/mm			3000.000	3450.000	3225.000	0.008



A decorative geometric pattern, resembling a complex tessellation or Islamic geometric design, is located in the top right corner of the page. It features a series of interlocking lines forming star-like and polygonal shapes, with some areas filled with a fine grid pattern. The pattern is oriented diagonally, following the edge of the page.

# Division 15

## Mechanical



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## **Division 15.. Mechanical..**

### **Estimating Tips:**

#### **151 Pipe & Fittings:**

This sub-division is primarily basic pipe and related materials. The pipe may be used by any of the mechanical disciplines, i.e., plumbing, fire protection, heating and air conditioning. When operating an estimate it may be necessary to approximate the fittings. Fittings usually run between 25% and 50% of the cost of the pipe. The lower percentage is for simpler runs, and the higher number is for complex areas like mechanical room.

#### **152 Plumbing Fixtures:**

Plumbing fixture costs usually require two (2) lines, the fixture itself and its "rough-in, supply and waste".

#### **153 Plumbing Appliances:**

Estimators shall include in estimate all required vents needed for gas or fired appliances.

#### **154 Fire Protection:**

Estimators shall be aware of the system used and to include all items required. Also, estimators shall include in estimate any special requirements to meet the local fire code standards.

#### **155 Heating:**

When estimating the cost of an HVAC system, check to see who is responsible for providing and installing the temperature control system. Focus on boilers capacity whether it is output or input capacity.

#### **156 HVAC Piping Specialties:**

Be aware not to overlook correct pressure rating and type of connections (threaded, welded or flanged)

#### **157 Air Conditioning & Ventilation:**

Estimator shall be aware that the cost of duct work varies with job size and type of distribution. Estimators are advised to list all duct types, fittings and accessories to get the unit cost of duct kilogram. Estimators shall be aware of duct internal pressure.

HVAC in general is let to be specialized sub-contractors. Estimators shall focus also on insulation requirements, not to duplicate electrical work requirements for HVAC, free service warranty if required, equipment foundation, equipment and pipe painting and identification.

**DIVISION 15 : MECHANICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
<b>151</b>	<b>PIPE &amp; FITTINGS</b>						
<b>151 100</b>	<b>MISCELLANEOUS FITTINGS</b>						
<b>151 105</b>	<b>BACKFLOW PREVENTER</b>						
151 105-4120	Backflow preventer, including gate valves, four test cocks, corrosion resistant automatic,	EA	1 Plumber 1 Tool set	12.000	14.000	13.000	0.667
151 105-4140	Backflow preventer, including gate valves, four test cocks, corrosion resistant automatic, threaded 25 mm pipe size [1"]			11.000	13.000	12.000	0.727
151 105-4160	Backflow preventer, including gate valves, four test cocks, corrosion resistant automatic, threaded 38 mm pipe size [1-1/2"]			8.000	9.000	8.500	1.000
151 105-4180	Backflow preventer, including gate valves, four test cocks, corrosion resistant automatic, threaded 50 mm pipe size [2"]			6.000	7.000	6.500	1.333
151 105-5080	Backflow preventer, OS&Y valves, flanged, bronze 76 mm pipe size [3"]			6.000	7.000	6.500	1.333
151 105-5100	Backflow preventer, OS&Y valves, flanged, bronze 100 mm pipe size [4"]			4.500	5.000	4.750	1.778
151 105-5120	Backflow preventer, OS&Y valves, flanged, bronze 150 mm pipe size [6"]			2.650	3.000	2.825	3.019
151 105-5680	Backflow preventer, OS&Y valves, flanged, iron 64 mm pipe size [2-1/2"]			6.500	7.000	6.750	1.231
151 105-5700	Backflow preventer, OS&Y valves, flanged, iron 100 mm pipe size [4"]			4.500	5.000	4.750	1.778
151 105-5720	Backflow preventer, OS&Y valves, flanged, iron 150 mm pipe size [6"]			2.650	3.000	2.825	3.019
151 105-5740	Backflow preventer, OS&Y valves, flanged, iron 200 mm pipe size [8"]			1.750	2.000	1.875	4.571
<b>151 110</b>	<b>CLEANOUTS:</b>						
151 110-0100	Cleanout floor type round or square, nickel bronze top 50 mm pipe size [2"]	EA	0.125 Foreman 1.000 Plumber 1.000 Plumber Helper 1.000 Tool Set	9.000	10.000	9.500	0.889
151 110-0120	Cleanout floor type round or square, nickel bronze top 76 mm pipe size [3"]			7.000	8.000	7.500	1.143
151 110-0140	Cleanout floor type round or square, nickel bronze top 100 mm pipe size [4"]			5.000	6.000	5.500	1.600
151 110-1100	Cleanout floor type round top, recessed for terrazzo 100 mm pipe size [4"]			3.750	4.000	3.875	2.133
<b>151 115</b>	<b>CLEANOUT TEE:</b>						
151 115-0200	Cleanout tee shape cast iron with countersunk plug 50 mm pipe size [2"]	EA	1 Plumber 1 Plumber Helper 1 Tool set	6.000	7.000	6.500	1.333
151 115-0240	Cleanout tee shape cast iron with countersunk plug 100 mm pipe size [4"]			5.000	6.000	5.500	1.600
151 115-0280	Cleanout tee cast iron with countersunk plug 150 mm pipe size [6"]			4.500	5.000	4.750	1.778
151 115-4040	ABS, DWV, cleanout tee, 76 mm pipe size [3"]			16.000	18.000	17.000	0.500
151 115-4050	ABS, DWV, cleanout tee, 100 mm pipe size [4"]			12.000	14.000	13.000	0.667
151 115-4120	ABS, DWV, cleanout plug 76 mm pipe size [3"]			30.000	35.000	32.500	0.267
151 115-4130	ABS, DWV, cleanout plug 100 mm pipe size [4"]			25.000	29.000	27.000	0.320
151 115-4200	ABS, DWV, cleanout adapter fitting, 76 mm pipe size [3"]			30.000	35.000	32.500	0.267
151 115-4210	ABS, DWV, cleanout adapter fitting, 100 mm pipe size [4"]			25.000	29.000	27.000	0.320
151 115-5030	PVC, DWV, cleanout tee, 76 mm pipe size [3"]			16.000	18.000	17.000	0.500
151 115-5040	PVC, DWV, cleanout tee, 100 mm pipe size [4"]			12.000	14.000	13.000	0.667
<b>151 120</b>	<b>CONNECTORS:</b>						
151 120-0240	Connectors flexible, corrugated, 22 mm O.D., 13 mm I.D., gas, seamless brass, steel fittings 600 mm long [24"]	EA	1 Plumber 1 Tool set	28.000	32.000	30.000	0.286
151 120-0340	Connectors flexible, corrugated, 22 mm O.D., 13 mm I.D., gas, seamless brass, steel fittings 1524 mm long [60"]			25.000	29.000	27.000	0.320
151 120-2260	Connector flexible, corrugated, 22 mm O.D. 13 mm I.D. Water, copper tubing, dielectric separators, 600 mm long [24"]			28.000	32.000	30.000	0.286
<b>151 125</b>	<b>DRAINS:</b>						
151 125-0400	Drains, Deck, auto park, C.I., 330 mm top, from 76 mm to 150 mm pipe size	EA	1 Plumber 1 Plumber Apprentice 1 Tool set	7.000	8.000	7.500	1.143
151 125-2000	Drains, floor, medium duty, C.I., double flange, 178 mm top, from 50 mm to 76 mm pipe size			10.000	12.000	11.000	0.800
151 125-2400	Drains, heavy duty, with sediment bucket, C.I., 300 mm loose grate, from 76 mm to 150 mm pipe			7.000	8.000	7.500	1.143
151 125-2820	Drain, shower, with strainer, uniform diam. trap, bronze top, 100 mm pipe size			6.000	7.000	6.500	1.333
151 125-3890	Drain, roof, flat metal deck, C.I. body, 300 mm C.I. dome 76 mm pipe size			12.000	14.000	13.000	0.667
151 125-3920	Drain, roof, flat metal deck, C.I. body, 300 mm C.I. dome 150 mm pipe size			8.000	9.000	8.500	1.000
151 125-4980	Drain, scupper floor, oblique strainer, C.I. 150 x 180 mm top, from 50 mm to 100 mm pipe size			13.000	15.000	14.000	0.515
151 125-5100	Drain, scupper floor, oblique strainer, C.I. 200 x 300 mm top, 127 and 150 mm pipe			11.000	13.000	12.000	0.727
151 125-6000	Drain, trench floor, heavy duty, modular, C.I., 300 mm x 300 mm top, from 50 mm to 150 mm pipe			6.000	7.000	6.500	1.333



**DIVISION 15 : MECHANICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
151 125-7100	Backwater valve, soil pipe, C.I. body, bronze gate and automatic flapper valves for pipes from 76 mm to 150 mm	↓	↓	10.000	12.000	11.000	0.800
151 125-7340	Backwater valve, soil pipe, C.I. body, bronze flapper valve, bolted cover 150 mm pipe size	EA	2 Plumbers 1 Plumber Apprentice 2 Tools Set	14.000	16.000	15.000	1.143
<b>151 141</b>	<b>FAUCETS / FITTINGS:</b>						
151 141-0150	Bath, faucets, diverter spout combination, sweat	EA	1 Plumber 1 Tool set	6.000	7.000	6.500	1.333
151 141-0840	Flush valves, with vacuum breaker for water closet			6.000	7.000	6.500	1.333
151 141-1000	Automatic flush sensor and operator for kitchen sink faucets, top mount, cast spout			8.000	9.000	8.500	1.000
151 141-2000	Laundry faucets, shelf type, iron pipe size, "IPS" or copper unions			10.000	12.000	11.000	0.800
151 141-2100	Lavatory faucet, centerset, without drain			8.000	9.000	8.500	1.000
151 141-3000	Service sink faucet, cast spout, pall hook, hose end			12.000	14.000	13.000	0.667
151 141-4000	Shower by-pass valve with union			15.000	17.000	16.000	0.533
151 141-4200	Shower thermostatic mixing valve, concealed			6.000	7.000	6.500	1.333
151 141-5000	Silcock, compact, brass, IPS or copper to hose	↓	↓	18.000	21.000	19.500	0.444
<b>151 156</b>	<b>HYDRANTS:</b>						
151 156 -0200	Hydrant wall type, moderate climate, bronze, encased 20 mm IPS connection [3/4"]	EA	1 Plumber 1 Plumber Apprentice 1 Tool set	12.000	14.000	13.000	0.667
151 156 -3100	Hydrant ground box type, bronze frame, 20 mm IPS connection, all bronze, polished face, set flush, 600 mm depth of bury	↓	↓	6.000	7.000	6.500	1.333
151 156 -5120	Hydrant, wall type moderate climate, all bronze, polished face and cover, set flush, 25 mm IPS connection [1"]	↓	↓	11.000	13.000	12.000	0.727
<b>151 165</b>	<b>SHOCK ABSORBERS:</b>						
151 165-0500	Shock absorbers copper 20 mm male IPS for 1 to 11 fixtures	EA	1 Plumber 1 Tool set	9.000	10.000	9.500	0.889
151 165-0700	Shock absorbers copper 32 mm male, IPS for 33 to 60 fixtures			7.000	8.000	7.500	1.143
151 165-0800	Shock absorbers copper 38 mm male I.P.S. for 61 to 113 fixtures			7.000	8.000	7.500	1.143
151 165-1000	Shock absorbers copper 64 mm male I.P.S. for 155 to 330 fixtures	↓	↓	3.000	3.000	3.000	2.667
<b>151 170</b>	<b>SUPPORT / CARRIERS:</b>						
151 170-0600	Supports/ carriers for drinking fountain, wall mounted, plate type with studs, top back plate	EA	1 Plumber 1 Tool set	5.000	6.000	5.500	1.600
151 170-3050	Supports/ carriers for lavatory, concealed arm wall mounted in masonry			4.000	5.000	4.500	0.000
151 170-4650	Supports/ carriers for sink, floor/ wall mounted, exposed arm system			3.000	3.000	3.000	0.000
151 170-6200	Supports/ carriers for urinal, floor/wall mounted, 50 mm or 76 mm coupling with bearing plate			4.000	5.000	4.500	0.000
151 170-7040	Supports/ carriers for water closet, siphon set, horizontal, adjustable, caulk, single, 100 mm pipe size			4.000	5.000	4.500	0.000
151 170-7820	Supports/ carriers for water closet, blowout, vertical offset, caulk or thread, single, 100 mm pipe size			4.000	5.000	4.500	0.000
151 170-8240	Supports/ carriers for water closet, residential, floor mounted, single, 76 mm caulk, 50 mm or 76 mm vent			3.000	3.000	3.000	0.000
151 170-9100	Supports/ carriers for water cooler (electric), floor mounted, plate type with bearing plate, single	↓	↓	4.000	5.000	4.500	2.000
<b>151 181</b>	<b>TRAPS:</b>						
151 181-1140	Cast iron "C.I." Service weight, long P trap, 50 mm pipe size, up to 460 mm long	EA	1 Plumber 1 Plumber Apprentice 1 Tool set	12.000	14.000	13.000	0.667
151 181-2120	Running trap, C.I., Service weight, single hub, with vent, 100 mm pipe size, 100 mm vent			10.000	12.000	11.000	0.800
151 181-3420	C.I., Service weight, deep seal trap, 50 mm pipe size [2"]			11.000	13.000	12.000	0.727
151 181-3440	C.I., Service weight, deep seal trap, 76 mm pipe size [3"]		↓	10.000	12.000	11.000	0.800
151 181-3800	C.I., Service weight, drum trap, 100 x 127 mm, 50 mm tapping		2 Plumbers 1 Plumber Apprentice 2 Tools Set	12.000	14.000	13.000	1.333
151 181-4840	Copper, drainage, drum trap 76 mm x 150 mm swivel, 38 mm pipe size		1 Plumber 1 Tool set	12.000	14.000	13.000	0.667
151 181-5280	Copper, drainage, P trap, standard pattern, 76 mm pipe size			9.000	10.000	9.500	0.889
151 181-5400	Copper, drainage, P trap with cleanout and slip joint, 38 mm pipe size	↓	↓	12.000	14.000	13.000	0.667
<b>151 185</b>	<b>VACUUM BREAKERS: STRAIGHT RUN, FITTINGS NOT INCLUDED</b>						
151 185-1040	Vacuum breaker, anti-siphon, brass, 6 mm size	EA	1 Plumber 1 Tool set	20.000	23.000	21.500	0.400
151 185-1060	Vacuum breaker, anti-siphon, brass, 13 mm size			20.000	23.000	21.500	0.400
151 185-1100	Vacuum breaker, anti-siphon, brass, 25 mm size			16.000	18.000	17.000	0.500
151 185-1160	Vacuum breaker, anti-siphon, brass, 50 mm size	↓	↓	9.000	10.000	9.500	0.889
<b>151 195</b>	<b>VENT FLASHING:</b>						



**DIVISION 15 : MECHANICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
151 195-1020	Vent flashing, alum. with lead ring or copper with neoprene ring, size 32 mm pipe	EA	1 Plumber 1 Tool set	17.000	20.000	18.500	0.471
151 195-1040	Vent flashing, alum. with lead ring or copper with neoprene ring, size 50 mm pipe			15.000	17.000	16.000	0.533
151 195-1060	Vent flashing, alum. with lead ring or copper with neoprene ring, size 100 mm pipe			14.000	16.000	15.000	0.571
<b>151 200</b>	<b>PIPING</b>						
<b>151 200</b>	<b>PIPING</b>	See also divisions 026 & 027 for sitework					
<b>151 201</b>	<b>PIPING ELEVATED INSTALLATION</b>						
151 201-0100	Piping, add to labor for elevated installation for building from 4 to 6 floors	Percent					
151 201-0200	Piping, Add to labor for elevated installation for building from 6 floors up to 10 floors						
151 201-0300	Piping, labor for elevated installation for buildings more than 10 floors add per floor						
151 201-1080	Piping, Add to labor for elevated installation, if building floor to floor height, from 3 m to 4.6 m						
151 201-1080	Piping, Add to labor for elevated installation, if building floor to floor height, from 4.6 m to 6.0 m						
151 201-1080	Piping, Add to labor for elevated installation, if building floor to floor height, from 6.1 m to 8.0 m						
151 201-1140	Piping, Add to labor for elevated installation, if building floor to floor height, from 8.1 m to 10.0 m						
151 201-1160	Piping, Add to labor for elevated installation, if building floor to floor height, from 10.1 m to 12.0 m						
151 201-1200	Piping, Add to labor for elevated installation, if building floor to floor height, more than 12.0 m						
<b>151 250</b>	<b>BRASS PIPE</b>						
<b>151 251</b>	<b>PIPE, BRASS:</b>						
151 251-1120	Pipe, brass, plain end, field threaded, coupling & clevis hanger 3 m O.C., 13 mm diameter [1/2"]	LM	0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 0.375 Tool Set 1.000 Power & Pipe Power Tools	21.120	24.000	22.560	0.521
151 251-1140	Pipe, brass, plain end, field threaded, coupling & clevis hanger 3 m O.C., 20 mm diameter [3/4"]			20.210	23.000	21.605	0.544
151 251-1160	Pipe, brass, plain end, field threaded, coupling & clevis hanger 3 m O.C., 25 mm diameter [1"]			19.270	22.000	20.635	0.571
151 251-1200	Pipe, brass, plain end, field threaded, coupling & clevis hanger 3 m O.C., 38 mm diameter [1-1/2"]			16.240	19.000	17.620	0.677
151 251-1220	Pipe, brass, plain end, field threaded, coupling & clevis hanger 3 m O.C., 50 mm diameter [2"]			15.740	18.000	16.870	0.699
<b>151 300</b>	<b>CAST IRON PIPE</b>						
<b>151 301</b>	<b>PIPE, CAST IRON:</b>						
151 301-2120	Pipe, cast iron on hangers 1.5 m O.C., single hub, service wt., lead & oakum joints 3 m O.C., 50 mm diameter [2"]	LM	0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 0.375 Tool Set 1.000 Power & Pipe Power Tools	14.410	17.000	15.705	0.763
151 301-2160	Pipe, cast iron on hangers 1.5 m O.C., single hub, service wt., lead & oakum joints 3 m O.C., 100 mm diameter [4"]		0.125 Plumber Foreman 2.000 Plumber 1.000 Plumber Apprentice 0.375 Tool Set 1.000 Power & Pipe Power Tools	14.530	17.000	15.765	0.757
151 301-2200	Pipe, cast iron on hangers 1.5 m O.C., single hub, service wt., lead & oakum joints 3 m O.C., 150 mm diameter [6"]			10.460	12.000	11.230	1.052
151 301-2200	Pipe, cast iron on hangers 1.5 m O.C., single hub, service wt., lead & oakum joints 3 m O.C., 200 mm diameter [8"]			8.370	10.000	9.185	1.314
151 301-2200	Pipe, cast iron on hangers 1.5 m O.C., single hub, service wt., lead & oakum joints 3 m O.C., 250 mm diameter [10"]			7.230	8.000	7.615	1.521
151 301-2200	Pipe, cast iron on hangers 1.5 m O.C., single hub, service wt., lead & oakum joints 3 m O.C., 300 mm diameter [12"]			5.850	7.000	6.425	1.880
151 301-2322	Pipe, cast iron on hangers 1.5 m O.C., double hub, service wt., lead & oakum joints 3 m O.C., 100 mm diameter [4"]			13.800	16.000	14.900	0.797
151 301-2325	Pipe, cast iron on hangers 1.5 m O.C., double hub, service wt., lead & oakum joints 3 m O.C., 150 mm diameter [6"]			9.930	11.000	10.465	1.108
151 301-2342	Pipe, cast iron on hangers 1.5 m O.C., single hub, extra heavy wt., lead & oakum joints 3 m O.C., 100 mm diameter [4"]			13.800	16.000	14.900	0.797
151 301-2345	Pipe, cast iron on hangers 1.5 m O.C., single hub, extra heavy wt., lead & oakum joints 3 m O.C., 150 mm diameter [6"]			9.930	11.000	10.465	1.108
151 301-4100	Pipe C.I. on hangers 1.5 m O.C., no hub, service wt., lead & oakum joint coupling coupling 3 m O.C., 38 mm diameter [1-1/2"]			20.120	23.000	21.560	0.547
151 301-4160	Pipe C.I. on hangers 1.5 m O.C., no hub, service wt., lead & oakum joints, coupling 3 m O.C., 100 mm diameter [4"]			16.050	18.000	17.025	0.685
<b>151 310</b>	<b>CAST IRON PIPE FITTING: STRAIGHT RUN, FITTINGS NOT INCLUDED</b>						
151 310-0140	C.I. hub pipe fitting, standard weight Bend, Regular or Sweep, size 50mm	EA	0.125 Foreman 1.000 Plumber 1.000 Plumber Helper 1.00 Tool Set	32.000	37.000	34.500	0.250
151 310-0160	C.I. hub pipe fitting, standard weight Bend, Regular or Sweep, size 76mm			28.000	32.000	30.000	0.286



**DIVISION 15 : MECHANICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
151 310-0180	C.I. hub pipe fitting, standard weight Bend, Regular or Sweep, size 100mm			21.000	24.000	22.500	0.381
151 310-0200	C.I. hub pipe fitting, standard weight Bend, Regular or Sweep, size 150mm			14.000	16.000	15.000	0.571
151 310-0210	C.I. hub pipe fitting, standard weight Bend, Regular or Sweep, size 200mm			11.000	13.000	12.000	0.727
151 310-0620	C.I. hub pipe fitting; standard weight Tee, size 100 mm			10.000	12.000	11.000	0.800
151 310-0660	C.I. hub pipe fitting; standard weight Tee, size 200 mm			6.000	7.000	6.500	1.333
151 310-0800	C.I. hub pipe fitting; standard weight Trap, size 50 mm			32.000	37.000	34.500	0.250
151 310-0840	C.I. hub pipe fitting; standard weight Trap, size 76 mm			28.000	32.000	30.000	0.286
151 310-0860	C.I. hub pipe fitting; standard weight Trap, size 100 mm			21.000	24.000	22.500	0.381
151 310-0880	C.I. hub pipe fitting; standard weight Trap, size 150 mm			14.000	16.000	15.000	0.571
151 310-0880	C.I. hub pipe fitting; standard weight Trap, size 200 mm			11.000	13.000	12.000	0.727
151 310-1000	C.I. hub pipe fitting; standard weight Wye, size 50 mm			16.000	18.000	17.000	0.500
151 310-1100	C.I. hub pipe fitting; standard weight Wye, size 100 mm			10.000	12.000	11.000	0.800
151 310-1140	C.I. hub pipe fitting; standard weight Wye, size 150 mm			7.000	8.000	7.500	1.143
151 310-1300	C.I. hub pipe fitting; standard weight Double Wye or Cross, size 50 mm			10.000	12.000	11.000	0.800
151 310-1320	C.I. hub pipe fitting; standard weight Double Wye or Cross, size 76 mm			9.000	10.000	9.500	0.889
151 310-1340	C.I. hub pipe fitting; standard weight Double Wye or Cross, size 100 mm			7.000	8.000	7.500	1.143
151 310-1360	C.I. hub pipe fitting; standard weight Double Wye or Cross, size 150 mm			5.000	6.000	5.500	1.600
151 310-1380	C.I. hub pipe fitting; standard weight Double Wye or Cross, size 200 mm			4.000	5.000	4.500	2.000
151 310-2000	C.I. non hub pipe fitting, standard weight Quarter or Sweep Bend, size 38 mm	EA	0.125 Foreman 1.000 Plumber 1.000 Plumber Helper 1.00 Tool Set	28.000	32.000	30.000	0.286
151 310-2020	C.I. non hub pipe fitting, standard weight Quarter or Sweep Bend, size 50 mm			24.000	28.000	26.000	0.333
151 310-2060	C.I. non hub pipe fitting, standard weight Quarter or Sweep Bend, size 100 mm			17.000	20.000	18.500	0.471
151 310-2100	C.I. non hub pipe fitting, standard weight Quarter or Sweep Bend, size 200 mm			11.000	13.000	12.000	0.727
151 310-2300	C.I. non hub pipe fitting, standard weight Stainless Steel Coupling, size 50 mm			60.000	69.000	64.500	0.133
151 310-2400	C.I. non hub pipe fitting; standard weight Stainless Steel Coupling, size 200 mm			60.000	69.000	64.500	0.133
151 310-2600	C.I. non hub pipe fitting; standard weight Sanitary Tee, size 50 mm			15.000	17.000	16.000	0.533
151 310-2700	C.I. non hub pipe fitting; standard weight Sanitary Tee, size 150 mm			9.000	10.000	9.500	0.889
151 310-2740	C.I. non hub pipe fitting; standard weight Sanitary Tee, size 200 mm			7.000	8.000	7.500	1.143
151 310-2800	C.I. non hub pipe fitting; standard weight Sanitary Cross, size 50 mm			13.000	15.000	14.000	0.615
151 310-2880	C.I. non hub pipe fitting; standard weight Sanitary Cross, size 100 mm			9.000	10.000	9.500	0.889
151 310-2960	C.I. non hub pipe fitting; standard weight Sanitary Cross, size 200 mm			8.000	9.000	8.500	1.000
<b>151 400</b>	<b>COPPER PIPE &amp; TUBING</b>						
<b>151 401</b>	<b>PIPE, COPPER: INCLUDING 1 COUPLING, 1 TEE &amp; 1 ELL EVERY 6 METERS</b>						
151 401-1200	Pipe, copper solder joints type K tubing, coupling, & clevis hangers 3 m O.C. 25 mm diameter	LM	0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 0.375 Tools Set 1.000 Power & Pipe Power Tools	16.750	19.000	17.875	0.657
151 401-1260	Pipe, copper solder joints type K tubing, coupling, & clevis hangers 3 m O.C. 50 mm diameter			12.710	15.000	13.855	0.865
151 401-2100	Pipe, copper solder joints type L tubing, coupling, & hangers 3 m O.C. 6 mm diameter			32.900	38.000	35.450	0.334
151 401-2180	Pipe, copper solder joints type L tubing, coupling, & hangers 3 m O.C. 20 mm diameter [3/4"]			28.610	33.000	30.805	0.384
151 401-2200	Pipe, copper solder joints type L tubing, coupling, & hangers 3 m O.C. 25 mm diameter [1"]			25.430	29.000	27.215	0.433
151 401-2260	Pipe, copper solder joints type L tubing, coupling, & hangers 3 m O.C. 50 mm diameter [2"]			15.890	18.000	16.945	0.692
151 401-2300	Pipe, copper solder joints type L tubing, coupling, & hangers 3 m O.C. 76 mm diameter [3"]			11.130	13.000	12.065	0.988
151 401-2340	Pipe, copper solder joints type L tubing, coupling, & hangers 3 m O.C. 100 mm diameter [4"]			7.790	9.000	8.395	1.412
151 401-2380	Pipe, copper solder joints type L tubing, coupling, & hangers 3 m O.C. 150 mm diameter [6"]		0.125 Plumber Foreman (ins) 2.000 Plumbers 1.000 Plumber Apprentice 0.375 Tools Set 1.000 Power & Pipe Power Tools	10.940	13.000	11.970	1.005



**DIVISION 15 : MECHANICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
151 401-4120	Pipe copper, silver solder joints, type DWV tubing, coupling, & hangers 3 m O.C. 50 mm diameter [1-1/2"]		0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 0.375 Tools Set 1.000 Power & Pipe Power Tools	12.710	15.000	13.855	0.865
151 401-4140	Pipe copper, type DWV tubing, coupling & hangers 3 mm o.c 50 mm diameter [2"]			15.690	19.000	17.845	0.659
151 401-4200	Pipe copper, type DWV tubing, coupling & hangers 3 mm o.c 150 mm diameter [6"]	LM	0.125 Plumber Foreman (ins) 2.000 Plumbers 1.000 Plumber Apprentice 0.375 Tools Set 1.000 Power & Pipe Power Tools	11.480	13.000	12.240	0.958
<b>151 450</b>	<b>CORROSION RESISTANT PIPE</b>						
<b>151 451</b>	<b>PIPE, CORROSION RESISTANT:</b>						
151 451-1100	Pipe, corrosion resistant, no coupling, or hangers, iron alloy, drain, mechanical joint, 50 mm diameter [2"]	LM	0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 0.375 Tools Set 1.000 Power & Pipe Power Tools	15.500	18.000	16.750	0.710
151 451-1140	Pipe, corrosion resistant, no coupling, or hangers, iron alloy, drain, mechanical joint, 100 mm diameter [4"]			11.630	13.000	12.315	0.946
151 451-3120	Pipe, plastic, epoxy, fiberglass filament wound 100 mm diameter			10.170	12.000	11.085	1.082
151 451-3960	Pipe, plastic polyester, fiberglass filament wound 50 mm diameter			14.340	16.000	15.170	0.767
151 451-5000	Pipe, plastic polypropylene, acid resistant, fire retardant, schedule 40, 38 mm diameter			15.890	18.000	16.945	0.692
151 451-5140	Pipe, plastic polypropylene, acid resistant, fire retardant, schedule 40, 100 mm diameter			10.330	12.000	11.165	1.065
151 451-6120	Pipe, plastic proxylene, fire retardant, schedule 40, 76 mm diameter			12.000	14.000	13.000	0.917
<b>151 500</b>	<b>GLASS PIPE</b>						
<b>151 501</b>	<b>PIPE, GLASS:</b>						
151 501-1100	Pipe, glass borosilicate, couplings & hangers 3 m O.C. drainage 38 mm diameter	LM	0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 0.375 Tools Set 1.000 Power & Pipe Power Tools	12.000	14.000	13.000	0.917
151 501-1120	Pipe, glass borosilicate, couplings & hangers 3 m O.C. drainage 50 mm diameter			9.000	10.000	9.500	1.222
<b>151 550</b>	<b>PLASTIC PIPE</b>						
<b>151 551</b>	<b>PIPE, PLASTIC:</b>						
151 551-0240	Pipe, plastic, fiberglass reinforced, couplings, 3 m O.C. hangers 90 mm, high strength, 50 mm diameter [2"]	LM	0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 0.375 Tools Set 1.000 Power & Pipe Power Tools	13.260	15.000	14.130	0.830
151 551-0280	Pipe, plastic, fiberglass reinforced, couplings 3 m O.C. hangers 90 mm, high strength, 100 mm diameter [4"]			10.610	12.000	11.305	1.037
151 551-0300	Pipe, plastic, fiberglass reinforced, couplings 3 m O.C. hangers 90 mm, high strength, 150 mm diameter [6"]			8.490	10.000	9.245	1.296
151 551-1870	Pipe, PVC, couplings, 3 m O.C., hangers 90 mm schedule 40, 20 mm diameter [3/4"]			25.300	29.000	27.150	0.435
151 551-1880	Pipe, PVC, couplings, 3 m O.C., hangers 90 mm schedule 40, 25 mm diameter [1"]			22.770	26.000	24.385	0.483
151 551-1900	Pipe, PVC, couplings, 3 m O.C., hangers 90 mm schedule 40, 38 mm diameter [1-1/2"]			20.490	24.000	22.245	0.537
151 551-1910	Pipe, PVC, couplings, 3 m O.C., hangers 90 mm schedule 40, 50 mm diameter [2"]			17.420	20.000	18.710	0.631
151 551-1920	Pipe, PVC, couplings, 3 m O.C., hangers 90 mm schedule 40, 64 mm diameter [2-1/2"]			14.810	17.000	15.905	0.743
151 551-1950	Pipe, PVC, couplings, 3 m O.C., hangers 910mm schedule 40, 127 mm diameter [6"]		0.125 Plumber Foreman (ins) 2.000 Plumbers 1.000 Plumber Helper 0.375 Tools Set 1.000 Power & Pipe Power Tools	16.200	19.000	17.600	0.679
151 551-4140	Pipe, plastic, DWV "drainage,wase,vent" type ABS or PVC, schedule 40, including couplings 3 m O.C., hangers 90 mm, 32 mm diameter		0.125 Plumber Foreman (ins) 1.000 Plumbers 1.000 Plumber Helper 0.375 Tools Set 1.000 Power & Pipe Power Tools	24.590	29.000	26.720	0.441
151 551-4160	Pipe, plastic, DWV "drainage,wase,vent" type ABS or PVC, schedule 40, including couplings 3 m O.C., hangers 90 mm, 50 mm diameter			17.420	20.000	18.710	0.631
151 551-5470	Pipe CPVC schedule 40, couplings 3 m o.c., hangers 90 mm, 20 mm diameter			25.300	29.000	27.150	0.435



**DIVISION 15 : MECHANICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
151 551-5480	Pipe, CPVC schedule 40, couplings 3 m o.c., hangers 90 mm, 25 mm diameter			22.770	26.000	24.385	0.483
151 551-5530	Pipe, CPVC schedule 40, couplings 3 m o.c., hangers 90 mm, 76 mm diameter			15.560	18.000	16.775	0.707
<b>151 600</b>	<b>STAINLESS STEEL PIPE</b>						
<b>151 601</b>	<b>PIPE, STAINLESS STEEL:</b>						
151 601-3550	Pipe, stainless steel, threaded, couplings and hangers 3 m. O.C., schedule 40, type 304/316, 6 mm diameter	LM	0.125 Plumber Foreman (ins) 1.000 Plumbers 1.000 Plumber Helper 0.375 Tools Set 1.000 Power & Pipe Power Tools	24.920	29.000	26.960	0.441
151 601-3550	Pipe, stainless steel, threaded, couplings and hangers 3 m. O.C., schedule 40, type 304/316, 10 mm diameter			24.300	28.000	26.150	0.453
151 601-3560	Pipe, stainless steel, threaded, couplings and hangers 3 m. O.C., schedule 40, type 304/316, 13 mm diameter			23.080	27.000	25.040	0.477
151 601-3570	Pipe, stainless steel, threaded, couplings and hangers 3 m. O.C., schedule 40, type 316, 20 mm diameter			21.930	25.000	23.465	0.502
151 601-3580	Pipe, stainless steel, threaded, couplings and hangers 3 m. O.C., schedule 40, type 304/316, 25 mm diameter			20.830	24.000	22.415	0.528
151 601-3610	Pipe, stainless steel, threaded, couplings and hangers 3 m. O.C., schedule 40, type 304/316, 50 mm diameter			15.620	18.000	16.810	0.704
151 601-3640	Pipe, stainless steel, threaded, couplings and hangers 3 m. O.C., schedule 40, type 304/316, 100 mm diameter			13.280	15.000	14.140	0.828
<b>151 700</b>	<b>STEEL PIPE</b>						
<b>151 701</b>	<b>PIPE, STEEL:</b>						
151 701-0560	Pipe, Steel black to A-53, schedule 40, or Galvanized, threaded with couplings, clevis type hangers, 3 m O.C., black, 13 mm diameter	LM	0.125 Plumber Foreman (ins) 1.000 Plumbers 1.000 Plumber Helper 0.375 Tools Set 1.000 Power & Pipe Power Tools	31.150	36.000	33.575	0.353
151 701-0570	Pipe, Steel black to A-53, schedule 40, or Galvanized, threaded with couplings, clevis type hangers, 3 m O.C., black, 20 mm diameter			29.770	34.000	31.885	0.369
151 701-0580	Pipe, Steel black to A-53, schedule 40, or Galvanized, threaded with couplings, clevis type hangers, 3 m O.C., black, 25 mm diameter			28.360	33.000	30.680	0.386
151 701-0590	Pipe, Steel black to A-53, schedule 40, or Galvanized, threaded with couplings, clevis type hangers, 3 m O.C., black, 32 mm diameter			26.410	30.000	28.205	0.417
151 701-0600	Pipe, Steel black to A-53, schedule 40, or Galvanized, threaded with couplings, clevis type hangers, 3 m O.C., black, 38 mm diameter	LM	0.125 Plumber Foreman (ins) 1.000 Plumbers 1.000 Plumber Helper 0.375 Tools Set 1.000 Power & Pipe Power Tools	24.410	28.000	26.205	0.451
151 701-0610	Pipe, Steel black to A-53, schedule 40, or Galvanized, threaded with couplings, clevis type hangers, 3 m O.C., black, 50 mm diameter			22.260	26.000	24.130	0.494
151 701-0620	Pipe, Steel black to A-53, schedule 40, or Galvanized, threaded with couplings, clevis type hangers, 3 m O.C., black, 64 mm diameter			20.390	23.000	21.695	0.539
151 701-0630	Pipe, Steel black to A-53, schedule 40, or Galvanized, threaded with couplings, clevis type hangers, 3 m O.C., black, 76 mm diameter			18.630	21.000	19.815	0.590
151 701-0650	Pipe, Steel black to A-53, schedule 40, or Galvanized, threaded with couplings, clevis type hangers, 3 m O.C., black, 100 mm diameter		0.125 Plumber Foreman (ins) 2.000 Plumbers 1.000 Plumber Helper 0.375 Tools Set 1.000 Power & Pipe Power Tools	22.890	26.000	24.445	0.481
151 701-0660	Pipe, Steel black to A-53, schedule 40, or Galvanized, threaded with couplings, clevis type hangers, 3 m O.C., black, 127 mm diameter			15.440	18.000	16.720	0.712
151 701-0670	Pipe, Steel black to A-53, schedule 40, or Galvanized, threaded with couplings, clevis type hangers, 3 m O.C., black, 150 mm diam.			13.430	15.000	14.215	0.819
151 701-1430	Pipe, Galvanized, threaded w/couplings, clevis type hangers, 3 m O.C., 200 mm diameter			10.610	12.000	11.305	1.037
151 701-1440	Pipe, Galvanized, threaded w/couplings, clevis type hangers, 3 m O.C., 250 mm diameter			9.040	10.000	9.520	1.217
151 701-1450	Pipe, Galvanized, threaded w/couplings, clevis type hangers, 3 m O.C., 300 mm diameter			7.550	9.000	8.275	1.457
151 701-2040	Pipe, Steel black to A-53, schedule 40, welded, on yoke & roll hangers at 3 m O.C., 25 mm diameter		0.125 Plumber Foreman (ins) 1.000 Plumbers 1.000 Plumber Helper 0.375 Tools Set 1.000 Electric Welding Machine	23.170	27.000	25.085	0.475
151 701-2070	Pipe, Steel black to A-53, schedule 40, welded, on yoke & roll hangers at 3 m O.C., 50 mm diameter			17.450	20.000	18.725	0.630
151 701-2090	Pipe, Steel black to A-53, schedule 40, welded, on yoke & roll hangers at 3 m O.C., 76 mm diameter			15.060	17.000	16.030	0.730
151 701-2110	Pipe, Steel black to A-53, schedule 40, welded, on yoke & roll hangers at 3 m O.C., 100 mm diameter		0.125 Plumber Foreman 2.000 Plumber 1.000 Plumber Apprentice 1.000 Electric Welding Machine 0.375 Tools Set	18.510	21.000	19.755	0.594



**DIVISION 15 : MECHANICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
151 701-2130	Pipe, Steel black to A-53, schedule 40, welded, on yoke & roll hangers at 3 m O.C., 150 mm diameter			10.850	12.000	11.430	1.013
151 701-2140	Pipe, Steel black to A-53, schedule 40, welded, on yoke & roll hangers at 3 m O.C., 200 mm diameter			8.580	10.000	9.290	1.282
151 701-2160	Pipe, Steel black to A-53, schedule 40, welded, on yoke & roll hangers at 3 m O.C., 300 mm diameter			6.100	7.000	6.550	1.803
<b>151 800</b>	<b>GROOVED JOINT PIPE</b>						
<b>151 801</b>	<b>PIPE, GROOVED-JOINT STEEL FITTINGS &amp; VALVES:</b>						
151 801-1040	Pipe, Grooved-joint black steel schedule 40, or Galvanized, including coupling & clevis type hanger 3 m O.C., 20 mm diameter	EA	0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 0.375 Tools Set 1.000 Power & Pipe Power Tools	26.790	31.000	28.895	0.411
151 801-1060	Pipe, Grooved-joint black steel schedule 40, or Galvanized, including coupling & clevis type hanger 3 m O.C., 32 mm diameter			23.770	27.000	25.385	0.463
151 801-1070	Pipe, Grooved-joint black steel schedule 40, or Galvanized, including coupling & clevis type hanger 3 m O.C., 38 mm diameter			21.970	25.000	23.485	0.501
151 801-1080	Pipe, Grooved-joint black steel schedule 40, or Galvanized, including coupling & clevis type hanger 3 m O.C., 50 mm diameter			20.030	23.000	21.515	0.549
151 801-1100	Pipe, Grooved-joint black steel schedule 40, or Galvanized, including coupling & clevis type hanger 3 m O.C., 76 mm diameter			16.760	19.000	17.880	0.656
151 801-1110	Pipe, Grooved-joint black steel schedule 40, or Galvanized, including coupling & clevis type hanger 3 m O.C., 100 mm diameter		0.125 Plumber Foreman 2.000 Plumber 1.000 Plumber Apprentice 0.375 Tools Set 1.000 Power & Pipe Power Tools	20.600	24.000	22.300	0.534
151 801-1120	Pipe, Grooved-joint black steel schedule 40, or Galvanized, including coupling & clevis type hanger 3 m O.C., 127 mm diameter			13.900	16.000	14.950	0.791
151 801-1130	Pipe, Grooved-joint black steel schedule 40, or Galvanized, including coupling & clevis type hanger 3 m O.C., 150 mm diameter			12.090	14.000	13.045	0.910
151 801-4030	Pipe, Steel fitting: Elbow 90° or 45°, painted 20 mm diameter		1 Plumber 1 Tool set	42.000	48.000	45.000	0.190
151 801-4040	Pipe, Steel fitting: Elbow 90° or 45°, painted 25 mm diameter			40.000	46.000	43.000	0.200
151 801-4070	Pipe, Steel fitting: Elbow 90° or 45°, painted 50 mm diameter			22.000	25.000	23.500	0.364
151 801-4080	Pipe, Steel fitting: Elbow 90° or 45°, painted 64 mm diameter	EA	0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tool Set	32.000	37.000	34.500	0.250
151 801-4100	Pipe, Steel fitting: Elbow 90° or 45°, painted 100 mm diameter			20.000	23.000	21.500	0.400
151 801-4120	Pipe, Steel fitting: Elbow 90° or 45°, painted 150 mm diameter			14.000	16.000	15.000	0.571
151 801-4700	Pipe, Steel fitting: Tee, painted, 20 mm diameter	EA	0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tool Set	32.000	37.000	34.500	0.250
151 801-4740	Pipe, Steel fitting: Tee, painted, 25 mm diameter	EA	1 Plumber 1 Tool set	30.000	35.000	32.500	0.267
151 801-4770	Pipe, Steel fitting: Tee, painted, 50 mm diameter			17.000	20.000	18.500	0.471
151 801-4800	Pipe, Steel fitting: Tee, painted, 100 mm diameter		0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tool Set	15.000	17.000	16.000	0.533
151 801-4820	Pipe, Steel fitting: Tee, painted, 150 mm diameter			11.000	13.000	12.000	0.727
151 801-4908	Pipe, Steel fitting: Couplings, rigid style or flexible, painted, 25 mm diameter		1 Plumber 1 Tool set	72.000	83.000	77.500	0.111
151 801-4912	Pipe, Steel fitting: Couplings, rigid style or flexible, painted, 50 mm diameter			40.000	46.000	43.000	0.200
151 801-4918	Pipe, Steel fitting: Couplings, rigid style or flexible, painted, 100 mm diameter		0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tool Set	36.000	41.000	38.500	0.222
151 801-4922	Pipe, Steel fitting: Couplings, rigid style or flexible, painted, 150 mm diameter			25.200	29.000	27.100	0.317
<b>151 950</b>	<b>VALVES</b>						
<b>151 951</b>	<b>VALVES, BRASS:</b>						
151 951-0530	Valves, brass, Gas stops, without checks, 13 mm size	EA	1 Plumber 1 Tool set	22.000	25.000	23.500	0.364
151 951-0550	Valves, brass, Gas stops, without checks, 25 mm size			16.000	18.000	17.000	0.500
151 951-0560	Valves, brass, Gas stops, without checks, 32 mm size			12.000	14.000	13.000	0.687
<b>151 955</b>	<b>VALVES, BRONZE:</b>						
151 955-1050	Valves, bronze, Angle or Ball, 1034 kPa, rising stem, threaded 10 mm size	EA	1 Plumber 1 Tool set	22.000	25.000	23.500	0.364
151 955-1080	Valves, bronze, Angle or Ball, 1034 kPa, rising stem, threaded 25 mm size			16.000	18.000	17.000	0.500
151 955-1110	Valves, bronze, Angle or Ball, 1034 kPa, rising stem, threaded 50 mm size			9.000	10.000	9.500	0.889
151 955-1860	Valves, bronze, Check, swing, regrinding disc, Class 150, threaded 20 mm size			17.000	20.000	18.500	0.471
151 955-1890	Valves, bronze, Check, swing, regrinding disc, Class 150, threaded 38 mm size			11.000	13.000	12.000	0.727



**DIVISION 15 : MECHANICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
151 955-1900	Valves, bronze, Check, swing, regrinding disc, Class 150, threaded, 50 mm size		↓	9.000	10.000	9.500	0.889
151 955-1910	Valves, bronze, Check, swing, regrinding disc, Class 150, threaded, 64 mm size		0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tool Set	12.000	14.000	13.000	0.667
151 955-2020	Valves, bronze, Check, swing, regrinding disc, 2068 kPa, threaded, 50 mm size		1 Plumber 1 Tool Set	7.000	8.000	7.500	1.143
151 955-2940	Valves, bronze, Gate, non rising stem, soldered, 862 kPa, 20 mm size [3/8"]		..	17.000	20.000	18.500	0.471
151 955-2980	Valves, bronze, Gate, non rising stem, soldered, 862 kPa, 50 mm size [3/8"]		*	9.000	10.000	9.500	0.889
151 955-3000	Valves, bronze, Gate, non rising stem, soldered, 862 kPa, 76 mm size [3/8"]		0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tool Set	11.000	13.000	12.000	0.727
151 955-4000	Valves, bronze, Gate, rising stem, soldered, 2068 kPa, 76 mm size		*	11.000	13.000	12.000	0.727
151 955-4340	Valves, bronze, Gate or Globe, threaded, rising stem, Class 150, 20 mm size		1 Plumber 1 Tool set	17.000	20.000	18.500	0.471
151 955-4370	Valves, bronze, Gate or Globe threaded, rising stem, Class 150, 38 mm size		*	11.000	13.000	12.000	0.727
151 955-4400	Valves, bronze, Gate or Globe, threaded, rising stem, Class 150, 76 mm size		0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tool Set	11.000	13.000	12.000	0.727
151 955-5650	Valves, bronze, Relief pressure & Temperature, self-closing, 25 mm size		1 Plumber 1 Tool set	20.000	23.000	21.500	0.400
151 955-5680	Valves, bronze, Relief pressure & Temperature, self-closing, 50 mm size		↓	13.000	15.000	14.000	0.615
151 955-6040	Valves, bronze, Relief pressure, poppet type, threaded, 20 mm size		↓	24.000	28.000	26.000	0.333
151 955-6480	Valves, bronze, Relief pressure, water, threaded, 50 mm size		↓	13.000	15.000	14.000	0.615
151 955-6950	Valves, bronze, Reducing, water pressure, 2068 kPa to 172-517 kPa, threaded or sweat, 20 mm size		↓	17.000	20.000	18.500	0.471
151 955-6970	Valves, bronze, Reducing, water pressure, 2068 kPa to 172-517 kPa, threaded or sweat, 32 mm size		1 Plumber 1 Tool set	12.000	14.000	13.000	0.667
151 955-8780	Valve, bronze, Tempering, water, threaded connections, 50 mm size	↓	*	9.000	10.000	9.500	0.889
<b>151 960 VALVES, IRON BODY:</b>							
151 960-1030	Valves iron body, Butterfly, wafer type, gear actuator, 50 mm size	EA	1 Plumber 1 Tool set	11.000	13.000	12.000	0.727
151 960-1050	Valves iron body, Butterfly, wafer type, gear actuator, 76 mm size		0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tool Set	7.000	8.000	7.500	1.143
151 960-1060	Valves iron body, Butterfly, wafer type, gear actuator, 100 mm size		↓	4.000	5.000	4.500	2.000
151 960-1080	Valves iron body, Butterfly, wafer type, gear actuator, 150 mm size		0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tool Set	3.500	4.000	3.750	2.286
151 960-2200	Valve iron body, Gate, 862 kPa, Non rising stem, or (OS&Y) outside screw & yoke, Flanged, 50 mm size	EA	1 Plumber 1 Tool set	4.000	5.000	4.500	2.000
151 960-2280	Valve iron body, Gate, 862 kPa, Non rising stem, or (OS&Y) outside screw & yoke, Flanged, 100 mm size		0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tool Set	2.500	3.000	2.750	3.200
151 960-2300	Valve iron body, Gate, 862 kPa, Non rising stem, or (OS&Y) outside screw & yoke, Flanged, 150 mm size		*	2.500	3.000	2.750	3.200
151 960-5500	Valve, iron body, Swing check, 862 kPa, Threaded, 50 mm size		1 Plumber 1 Tool set	9.000	10.000	9.500	0.889
151 960-5550	Valve, iron body, Swing check, 862 kPa, Threaded, 76 mm size		0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tool Set	11.000	13.000	12.000	0.727
151 960-5560	Valve, iron body, Swing check, 862 kPa, Threaded, 100 mm size		..	8.000	9.000	8.500	1.000
151 960-6000	Valve, iron body, Swing check, 862 kPa, Flanged, 50 mm size		1 Plumber 1 Tool set	4.000	5.000	4.500	2.000
151 960-6050	Valve, iron body, Swing check, 862 kPa, Flanged, 76 mm size		0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tool Set	3.500	4.000	3.750	2.286
151 960-6070	Valve, iron body, Swing check, 862 kPa, Flanged, 150 mm size	↓	*	2.500	3.000	2.750	3.200
<b>151 975 VALVES, PLASTIC:</b>							
151 975-1120	Valve, Angle or Ball, PVC or CPVC, threaded, 13 mm size	EA	1 Plumber 1 Tool set	21.000	24.000	22.500	0.381
151 975-1130	Valve, Angle or Ball, PVC or CPVC, threaded, 20 mm size			20.000	23.000	21.500	0.400
151 975-1260	Valve, Ball, PVC or CPVC, socket or threaded, single union, 32 mm size			17.000	20.000	18.500	0.471
151 975-1280	Valve, Ball, PVC or CPVC, socket or threaded, single union, 50 mm size			14.000	16.000	15.000	0.571
151 975-2150	Valve, ball, Polypropylene, threaded, 25 mm size			20.000	23.000	21.500	0.400
151 975-4900	Valve, Foot, PVC, socket or threaded, 13 mm size			27.000	31.000	29.000	0.296
151 975-4840	Valve, Foot, PVC, socket or threaded, 25 mm size			23.000	26.000	24.500	0.348
151 975-4980	Valve, Foot, PVC, socket or threaded, 38 mm size			21.000	24.000	22.500	0.381



**DIVISION 15 : MECHANICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVG.	AVRG. E. H.
151 975-6470	Strainer, Y sediment, PVC, socket or threaded, 38 mm size	↓	↓	17.000	20.000	18.500	0.471
<b>151 980</b>	<b>VALVES, STEEL:</b>						
151 980-1400	Valves, Cast steel, Check, swing type, Gate or Globe, 1034 kPa, flanged, 50 mm size	EA	1 Plumber 1 Tool set	6.000	7.000	6.500	1.333
151 980-1450	Valves, Cast steel, Check, swing type, Gate or Globe, 1034 kPa, flanged, 76 mm size		0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tools Set	3.500	4.000	3.750	2.286
151 980-1460	Valves, Cast steel, Check, swing type, Gate or Globe, 1034 kPa, flanged, 100 mm size			2.500	3.000	2.750	3.200
151 980-5750	Valves, Cast steel, Check valve, forged steel, Class 800, horizontal, socket or threaded, 25 mm size		1 Plumber 1 Tool set	16.000	18.000	17.000	0.500
151 980-5760	Valves, Cast steel, Check valve, forged steel, Class 800, horizontal, socket or threaded, 25 mm size	↓	↓	12.000	14.000	13.000	0.667
<b>152</b>	<b>PLUMBING FIXTURES</b>						
<b>152 100</b>	<b>FIXTURES</b>						
<b>152 101</b>	<b>FIXTURES:</b> Includes trim fittings, unless otherwise noted, for rough-in, supply, waste, and vent, see add for each type for electric water coolers, see division 153 -105 for color, unless otherwise noted, add						
<b>152 104</b>	<b>BATHS:</b>						
152 104-0140	Bath tubs, repressed porcelain enamel on cast iron, with trim 1067 mm x 940 mm	EA	0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tools Set	3.500	4.000	3.750	2.286
152 104-0220	Bath tubs, recessed porcelain enamel on cast iron, with trim 1829 mm x 914 mm			2.500	3.000	2.750	3.200
152 104-2200	Bath tubs, enameled formed steel, 1524 mm long			3.750	4.000	3.875	2.133
152 104-6100	Bath, whirlpool, with vented overflow, molded fiberglass 1876 mm x 1219 mm x 610 mm			0.850	1.000	0.925	9.412
152 104-9600	Rough-in, supply, waste and vent, for all above tubs based on 18 m supply, plastic & 18 meters DWV plastic piping			3.250	4.000	3.625	2.462
152 104-9620	Rough-in, supply, waste and vent, for all above tubs based on 18 m supply, copper & 18 meters DWV cast iron piping	↓	↓	2.250	3.000	2.625	3.556
<b>152 116</b>	<b>DRINKING FOUNTAIN:</b>						
152 116-2000	Drinking fountain, wall mounted, Bronze, cast aluminium or fiberglass, 300 mm back, single bubbler unit	EA	0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tools Set	6.000	7.000	6.500	1.333
152 116-2040	Drinking fountain, wall mounted, Bronze, cast aluminium or fiberglass, 300 mm back, dual bubbler unit			5.000	6.000	5.500	1.600
152 116-2400	Drinking fountain, precast stone, no back			6.000	7.000	6.500	1.333
152 116-2700	Drinking fountain, stainless steel, single bubbler, no back			6.000	7.000	6.500	1.333
152 116-2820	Drinking fountain, stainless steel, dual bubbler, with back, & dual level for handicapped	↓	↓	5.000	6.000	5.500	1.600
152 116-3300	Drinking fountain, vitreous China, 178 mm back	EA	0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tools Set	6.000	7.000	6.500	1.333
152 116-3940	Drinking fountain, vitreous China, 178 mm back, with vandal resistant bottom plate			6.000	7.000	6.500	1.333
152 116-4000	Drinking fountain, wall mounted, semi-recessed, poly-marble, single bubbler			6.000	7.000	6.500	1.333
152 116-7600	Drinking fountain, floor mounted, pedestal type, aluminum, architectural style, C.I. base			3.500	4.000	3.750	2.286
152 116-9980	Rough-in, Supply, vent & waste for drinking fountain, at 20 m, plastic supply piping and 20 m of DWV plastic piping			3.700	4.000	3.850	2.162
152 116-9990	Rough-in, Supply, vent & waste for drinking fountain, at 20 m, copper supply piping and 20 m of DWV cast iron piping	↓	↓	2.500	3.000	2.750	3.200
<b>152 124</b>	<b>INDUSTRIAL SAFETY FIXTURES</b> <i>Rough-in not included</i>						
152 124-1000	Eye wash fountain, plastic bowl or stainless steel, pedestal mounted or wall mounted	EA	0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tool Set	4.000	5.000	4.500	2.000
152 124-6000	Shower, multi-nozzle, eye-face wash combination			5.000	6.000	5.500	1.600
<b>152 128</b>	<b>INTERCEPTORS</b>						
152 128-0150	Interceptors, grease, 50 mm cast iron, 250 mL/s, 3.6 kg fat capacity	EA	1 Plumber 1 Tool set	3.000	3.000	3.000	2.667
152 128-1040	Interceptors, grease, 50mm cast iron, 947 mL/s, 13.6 kg fat capacity			2.250	3.000	2.625	3.556
152 128-1060	Interceptors, grease, 76 mm cast iron, 1260 mL/s, 18 kg fat capacity		↓	1.750	2.000	1.875	4.571
152 128-1160	Interceptors, grease, cast iron, 6300 mL/s, 90.7 kg fat capacity		0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tool Set	1.750	2.000	1.875	4.571
152 128-1580	Interceptors, hair, cast iron, 32 mm and 38 mm pipe connection		1 Plumber 1 Tool set	5.000	6.000	5.500	1.600

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**DIVISION 15 : MECHANICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
152 128-4000	Interceptors, oil, fabricated steel, 630 mL/s, 50 mm pipe size			3.000	3.000	3.000	2.667
152 128-4120	Interceptors, oil, fabricated steel, 1260 mL/s, 50 mm or 76 mm pipe size			2.250	3.000	2.625	3.556
152 128-4220	Interceptors, oil, fabricated steel, 6310 mL/s, 76 mm pipe size		0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tool Set	1.750	2.000	1.875	4.571
152 128-6000	Interceptors, solids & precious metals recovery, C.I., 32 mm to 50 mm pipe		1 Plumber 1 Tool set	3.000	3.000	3.000	2.667
152 128-6100	Interceptors, dental lab, large, C.I., 38 mm to 50 mm pipe			2.250	3.000	2.625	3.556
<b>152 136</b>	<b>LAVATORIES:</b>						
			<i>With trim</i>				
152 136-0640	Lavatory, Vanity top, Porcelain enamel on cast iron, 836 mm x 482 mm oval	EA	0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tool Set	6.000	7.000	6.500	1.333
152 136-1040	Lavatory, Vanity top, Cultured marble, single bowl, 635 mm x 482 mm, single bowl			6.000	7.000	6.500	1.333
152 136-1900	Lavatory, Vanity top, Stainless steel, self-rimming, 635 mm x 560 mm, single bowl, ledge			6.000	7.000	6.500	1.333
152 136-2600	Lavatory, Vanity top, Steel, enameled, 508 mm x 432 mm, single bowl			5.500	6.000	5.750	1.455
152 136-3200	Lavatory, Vanity top, Vitreous china, 560 mm x 483 mm, single bowl			4.750	5.000	4.875	1.684
152 136-3580	Rough-in, supply, waste and vent for all Vanity top lavatories; plastic piping, approximate run of 18 m each for both supply & DWV			3.740	4.000	3.870	2.139
152 136-3590	Rough-in, supply, waste and vent for all vanity top lavatories; copper supply piping, cast iron DWV piping, approximate run of 18 m each for both supply & DWV			2.600	3.000	2.800	3.077
152 136-4240	Lavatory, wall hung, Porcelain enamel on cast iron, 560 mm x 482 mm, single bowl			7.500	9.000	8.250	1.067
152 136-6000	Lavatory, wall hung, Vitreous china, 460 mm x 380 mm, single bowl with backsplash			6.500	7.000	6.750	1.231
152 136-6180	Lavatory, wall hung, Vitreous china, 483 mm x 483 mm, corner style			7.500	9.000	8.250	1.067
152 136-6960	Rough-in, supply, waste and vent for wall hung lavatories; plastic piping, approximate run of 18 m each for both supply & DWV			2.200	3.000	2.600	3.636
<b>152 140</b>	<b>LAUNDRY SINKS:</b>						
			<i>With trim</i>				
152 140-0100	Laundry sink Porcelain enamel on cast iron, black iron frame, 610 mm x 584 mm, single compartment	EA	0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tool Set	5.500	6.000	5.750	1.455
152 140-2020	Laundry sink, Molded stone on wall hangers or legs 560 mm x 530 mm, single compartment			5.500	6.000	5.750	1.455
152 140-2100	Laundry sink, Molded stone on wall hangers or legs 1140 mm x 530 mm, double compartment			4.500	5.000	4.750	1.776
152 140-3000	Laundry sink, Plastic, on wall hangers or legs, 1016 mm x 610 mm, double compartment			5.000	6.000	5.500	1.600
152 140-9600	Rough-in, supply, waste and vent for laundry sink; plastic piping, approximate run of 18 m each for both supply & DWV			3.500	4.000	3.750	2.286
152 140-9600	Rough-in, supply, waste and vent for laundry sink; copper supply piping and cast iron DWV piping approximate run of 18 m each for both supply & DWV			2.400	3.000	2.700	3.333
<b>152 148</b>	<b>SHOWERS:</b>						
152 148-3100	Showers, Stall, with door and trim, fiberglass, one piece, 3 walls, 910 mm x 910 mm	EA	0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tool Set	2.750	3.000	2.875	2.909
152 148-3250	Showers, Stall, with door and trim, fiberglass, one piece, 3 walls, 1626 mm x 1670 mm	EA	0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tool Set	2.000	2.000	2.000	4.000
152 148-4960	Rough-in, supply, waste and vent for shower stall; plastic piping, approximate run of 18 m each for both supply & DWV			3.250	4.000	3.625	2.462
152 148-4990	Rough-in, supply, waste and vent for shower stall; copper supply piping, and Cast iron DWV piping, approximate run of 18 m each for both supply & DWV			2.250	3.000	2.625	3.556
152 148-5000	Shower built-in, head, arm, 252 mL/s valve			6.500	7.000	6.750	1.231
<b>152 152</b>	<b>SINKS:</b>						
152 152-2100	Kitchen sink with faucets and drain, counter top, Porcelain enamel on C.I., 760 mm x 530 mm single bowl	EA	0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tool Set	5.750	7.000	6.375	1.391
152 152-3000	Kitchen sink with faucets and drain, counter top, Stainless steel, self rimming, 635 mm x 560 mm single bowl			5.750	7.000	6.375	1.391
152 152-4980	Rough in, supply, waste and vent for countertop sink; plastic piping, approximate run of 18 m each for both supply & DWV			3.500	4.000	3.750	2.286
152 152-5100	Kitchen sink with faucets and drain, raised deck, Porcelain enamel on C.I., 813 mm x 533 mm dual level, double bowl			2.750	3.000	2.875	2.909
152 152-5790	Rough-in, supply, waste and vent for wall service sink; plastic piping, approximate run of 18 m each for both supply & DWV			2.300	3.000	2.650	3.478
<b>152 168</b>	<b>URINALS:</b>						
152 168-3000	Urinals, Wall hung, Vitreous china, with hanger & self-closing valve	EA	0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tool Set	4.000	5.000	4.500	2.000



**DIVISION 15 : MECHANICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
152 168-3500	Rough-in, supply, waste and vent for wall hung urinal; plastic piping, approximate run of 18 m each for both supply & DWV			3.250	4.000	3.625	2.462
152 168-5000	Urinal Stali type, Vitreous china, includes valve			3.250	4.000	3.625	2.462
<b>152 180</b>	<b>WATER CLOSETS:</b>						
152 180-0200	Water closets, tank type, wall hung, one piece, Vitreous china, including seat, supply pipe w/stop	EA	0 125 Plumber Foreman 1 000 Plumber 1 000 Plumber Apprentice 1 000 Tool Set	5.750	7.000	6.375	1.391
152 180-1000	Water closet tank type, Vitreous china, floor mounted, one piece			6.750	8.000	7.375	1.185
152 180-1980	Rough-in, supply, waste, vent & carrier for wall hung water closet; plastic piping, approximate run of 10 m each for both supply and DWV			3.250	4.000	3.625	2.462
152 180-1990	Rough-in, supply, waste, vent & carrier for wall hung water closet; copper supply piping, & cast iron DWV piping, approximate run of 10 m each for both supply and DWV			2.250	3.000	2.625	3.558
152 180-3100	Water closet, bowl only, With flush valve, seat, wall hung or floor mounted			6.000	7.000	6.500	1.333
152 180-3200	For rough-in, supply, waste and vent, WC			3.500	4.000	3.750	2.286
<b>152 400</b>	<b>PUMPS</b>						
	See also Division 154 145						
<b>152 410</b>	<b>PUMPS, CIRCULATING</b>						
	Heated or chilled water application						
152 410-1100	Pump, circulating, bronze, flange connection, 20 mm to 38 mm size, 1/3 HP	EA	0 125 Plumber Foreman 1 000 Plumber 1 000 Plumber Apprentice 1 000 Tool Set	5.000	6.000	5.500	1.600
152 410-1180	Pump, circulating, bronze, flange connection, 64 mm size, 1/4 HP			4.000	5.000	4.500	2.000
152 410-2100	Pump, circulating, C.I. flanged connection 19 mm to 38 mm size in line, 1/3 HP			5.000	6.000	5.500	1.600
152 410-2220	Pump, circulating, C.I. flanged connection 76 mm size in line, 1/4 HP			3.250	4.000	3.625	2.462
<b>152 415</b>	<b>PUMPS, CONDENSATE RETURN SYSTEM</b>						
152 415-0200	Pump, condensate, simplex motor, float switch, controls, cast iron receiver	EA	0 125 Plumber Foreman 1 000 Plumber 1 000 Plumber Apprentice 1 000 Tool Set	0.875	1.000	0.938	9.143
152 415-1000	Pump, condensate, duplex, 2 pumps, motors, float switch, alternator assembly, C.I. receiver			0.375	0.500	0.438	21.333
<b>152 430</b>	<b>PUMPS, GENERAL UTILITY</b>						
	With motor, mounted on base						
152 430-0300	Pump, general utility, multi-stage, horizontal split, for boiler feed applications two stage 76 mm discharge x 100 mm suction, 75 HP	EA	0 50 Steamfitter Foreman 2 00 Steamfitters 0 50 Electrician 1 00 Steamfitter Apprentice 2 00 Tools Set 1 00 Chain Winch 1 00 Gas Welding M/C	0.200	0.500	0.350	160.000
152 430-0340	Pump, general utility, multi-stage, horizontal split, for boiler feed applications four stage, 76 mm discharge x 100 mm suction, 150 HP			0.125	0.500	0.313	256.000
152 430-2100	Pump, general utility, single stage, end suction, 38 mm discharge x 76 mm suction, 10 HP			0.550	1.000	0.775	58.182
152 430-2140	Pump, general utility, single stage, end suction, 50 mm discharge x 76 mm suction, 15 HP			0.500	1.000	0.750	64.000
152 430-3060	Pump, general utility, single stage, double suction, 76 mm discharge x 100 mm suction, 15 HP			0.400	1.000	0.700	80.000
152 430-3180	Pump, general utility, single stage, double suction, 150 mm discharge x 200 mm suction, 60 HP			0.200	0.500	0.350	160.000
152 430-3220	Pump, general utility, single stage, double suction, 100 HP, to 3000 GPM			0.170	0.500	0.335	188.235
152 430-3240	Pump, general utility, single stage, double suction, 150 HP, to 4000 GPM	EA	0 50 Steamfitter Foreman 2 00 Steamfitters 0 50 Electrician 1 00 Steamfitter Apprentice 2 00 Tools Set 1 00 Chain Winch 1 00 Gas Welding M/C	0.150	0.500	0.325	213.333
<b>152 450</b>	<b>PUMPS, PRESSURE BOOSTER SYSTEM</b>						
152 450-0420	Pressure booster pump system, with diaphragm tank, control & pressure switch 2 HP	EA	0 125 Plumber Foreman 1 000 Plumber 1 000 Plumber Apprentice 1 000 Tool Set	1.000	1.000	1.000	8.000
152 450-0440	Pressure booster pump system, with diaphragm tank, control & pressure switch 3 HP			0.900	1.000	0.950	6.889
152 450-0460	Pressure booster pump system, with diaphragm tank, control & pressure switch 5 HP		0 125 Plumber Foreman 2 000 Plumber 1 000 Plumber Apprentice 2 000 Tool Set	1.200	1.000	1.100	13.333
152 450-0500	Pressure booster pump system with diaphragm tank, control & pressure switch 10HP			1.100	1.200	1.150	6.000
<b>152 460</b>	<b>PUMPS, PEDESTAL SUMP</b>						
152 460-0400	Sump pump, pedestal, molded base 1325 mL/s at 4.5 m head, 1/3 HP	EA	1 Plumber 1 Tool Set	3.500	4.000	3.750	2.286
<b>152 465</b>	<b>PUMPS, SEWAGE EJECTOR</b>						



**DIVISION 15 MECHANICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
152 465-0500	Pump, sewage ejector simplex system incl. tank, cover, 4.5 m head, 140 Liter, polyethylene tank, 757 mL/s, 1/2 HP, 50 mm discharge [2"]	EA	0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tool Set	2.750	3.000	2.875	2.909
152 465-0660	Pump, sewage ejector simplex system incl. tank, cover, 4.5 m head, 170 Liter, polyethylene tank, 8 L/s, 3/4 HP, 76 mm discharge [3"]			2.500	3.000	2.750	3.200
152 465-0710	Pump sewage ejector, simplex system including tank, cover, 4.5 m head, 265 Liter, polyethylene tank, 757 mL/s, 1/2 HP, 76 mm discharge			2.250	3.000	2.625	3.556
152 465-0760	Pump sewage ejector, simplex system including tank, cover, 4.5 m head, 265 Liter, polyethylene tank, 8 L/s, 1 HP, 50 mm discharge			2.000	2.000	2.000	4.000
<b>152 480</b>	<b>PUMPS, SUBMERSIBLE</b>						
152 480-7540	Submersible, sump pump, automatic, cast iron, 32 mm discharge, 1/4 HP	EA	0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tool Set	5.000	6.000	5.500	1.600
152 480-7560	Submersible, sump pump, automatic, cast iron, 32 mm discharge, 1/2 HP			4.000	5.000	4.500	2.000
<b>152 490</b>	<b>PUMPS, WELL</b>						
	<i>See Div. 026704</i>						
<b>153</b>	<b>PLUMBING APPLIANCES</b>						
<b>153 100</b>	<b>WATER APPLIANCES</b>						
<b>153 105</b>	<b>WATER COOLER:</b>						
153 105-0100	Water cooler, wall mounted, non-recessed, 7 Gal. per hour	EA	0.125 Plumber Foreman 1.000 Plumber 0.250 Electrician 1.000 Plumber Apprentice 1.000 Tool Set	3.750	4.000	3.875	2.133
153 105-4720	Water cooler, floor mounted, flush-to-wall, 12 gal. per hour			5.750	7.000	6.375	1.391
153 105-5000	Water cooler, floor mounted, dual height, 12 gal. per hour			3.750	4.000	3.875	2.133
<b>153 110</b>	<b>WATER HEATERS</b>						
	<i>For solar, see Division 155 -471</i>						
153 110-1000	Residential, water heater, electric, glass lined tank, 38 liter, single element	EA	0.125 Plumber Foreman 1.000 Plumber 0.250 Electrician 1.000 Plumber Apprentice 1.000 Tool Set	5.000	6.000	5.500	1.600
153 110-1060	Residential, water heater, electric, glass lined tank, 100 liter, double element			4.500	5.000	4.750	1.778
153 110-1100	Residential, water heater, electric, glass lined tank, 200 liter, double element			4.000	5.000	4.500	2.000
153 110-1180	Residential, water heater, electric, glass lined tank, 400 liter, double element			2.750	3.000	2.875	2.909
153 110-4120	Commercial water heater, electric, 50 liter, 6 kW			3.500	4.000	3.750	2.286
153 110-4160	Commercial water heater, electric, 200 liter, 9 kW			3.000	3.000	3.000	2.667
153 110-4320	Commercial water heater, electric, 700 liter, 120 kW			1.500	2.000	1.750	5.333
153 110-6060	Commercial, water heater, gas fired, flush jacket, std. controls, vent not incl, 29 kW input, 360 liter/Hr			2.500	3.000	2.750	3.200
153 110-6340	Commercial, water heater, gas fired, flush jacket, std. controls, vent not incl, 352 kW input, 4350 liter/Hr			0.350	0.500	0.425	22.857
<b>153 150</b>	<b>WATER TREATMENT, POTABLE</b>						
153 150-6100	Water treatment, potable, softener systems, automatic, hardness capacity between regenerations and flow, 150 000 grains 2.3 L/s cont., 3.2 L/s peak	EA	0.125 Plumber Foreman 1.000 Plumber 0.250 Electrician 1.000 Plumber Apprentice 1.000 Tool Set	1.000	1.000	1.000	8.000
153 150-6200	Water treatment, potable, softener systems, automatic, hardness capacity between regenerations and flow, 300 000 grains 5.1 L/s cont., 7.1 L/s peak			0.800	1.000	0.900	10.000
153 150-6300	Water treatment, potable, softener systems, automatic, hardness capacity between regenerations and flow, 750 000 grains 10.1 L/s cont., 14.5 L/s peak			0.700	1.000	0.850	11.429
153 150-6400	Water treatment, potable, softener systems, automatic, hardness capacity between regenerations and flow, 900 000 grains 11.7 L/s cont., 17.0 L/s peak	EA	0.125 Plumber Foreman 1.000 Plumber 0.250 Electrician 1.000 Plumber Apprentice 1.000 Tool Set	0.600	1.000	0.800	13.333
<b>153 160</b>	<b>WATER SUPPLY METERS</b>						
153 160-2100	Water meter, domestic/commercial, bronze, threaded, 25 mm diameter, to 3.2 L/s	EA	1 Plumber 1 Tool Set	9.000	10.000	9.500	0.889
153 160-2340	Water meter, domestic/commercial, bronze, threaded/flanged, 38 mm diameter, to 6.31 L/s			6.000	7.000	6.500	1.333
153 160-2360	Water meter, domestic/commercial, bronze, threaded/flanged, 50 mm diameter, to 10.1 L/s			5.000	6.000	5.500	1.600
153 160-2640	Water meter, domestic/commercial, bronze, threaded, flanged, compound, 76 mm diameter, to 20.2 L/s		0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tools Set	2.700	3.000	2.850	2.963
153 160-2650	Water meter, domestic/commercial, bronze, threaded, flanged, compound, 100 mm diameter, to 31.5 L/s			1.350	2.000	1.675	5.926
<b>154</b>	<b>FIRE PROTECTION</b>						
<b>154 100</b>	<b>FIRE SYSTEMS</b>						
<b>154 101</b>	<b>AUTOMATIC FIRE SUPPRESSION SYSTEMS</b>						



**DIVISION 15 : MECHANICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
154 101-1000	Automatic fire suppression systems dispersion nozzle, CO2 76 mm x 127 mm	EA	1 Plumber 1 Tool Set	14.000	15.000	15.000	0.571
154 101-1100	Automatic fire suppression systems dispersion nozzle, FM 200, 38 mm			11.000	13.000	12.000	0.727
154 101-2000	Fire extinguisher, CO2 system, high pressure, 34 kg cylinder		0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tool Set	5.000	6.000	5.500	1.600
154 101-2540	Fire extinguisher, FM 200 system, filled, with mounting bracket, 89 kg container			3.000	3.000	3.000	2.667
154 101-3000	Fire extinguisher, FM 200 system, filled, including mounting bracket & provided with electro/mechanical release, 89 kg container			1.500	2.000	1.750	5.333
<b>154 115</b>	<b>FIRE EQUIPMENT CABINETS</b>						
154 115-3000	Fire cabinet, 20 ga. steel box, hose rack assy, 38 mm valve & 30 m hose, 610 mm x 1016 mm, aluminum or steel or stainless steel door and frame	EA	0.125 Foreman 1.000 Sprinkler Installer 1.000 Sprinkler Apprentice 1.000 Tool Set	5.000	6.000	5.500	1.600
154 115-5000	Fire cabinet, 20 ga. steel box, hose rack assy, 64 mm x 38 mm valve & 30 m hose, 610 mm x 1016 mm, aluminum or steel or stainless steel door and frame			5.000	6.000	5.500	1.600
<b>154 125</b>	<b>FIRE EXTINGUISHERS</b>						
154 125-2000	Fire extinguishers, ABC all purpose type 9.1 kg, installed on masonry or concrete	EA	1 Plumber 1 Tool Set	11.000	13.000	12.000	0.727
<b>154 135</b>	<b>FIRE HOSE AND EQUIPMENT</b>						
154 135-2640	Fire hose rack, swinging, for 38 mm diameter hose, enameled steel, upto 30 m and 38 m lengths of hose	EA	0.125 Foreman 1.000 Sprinkler Installer 1.000 Sprinkler Apprentice 1.000 Tool Set	16.000	18.000	17.000	0.500
154 135-3840	Fire hydrants, wall, with caps, single, flush, polished brass 64 mm x 76 mm			4.000	5.000	4.500	2.000
154 135-7180	Fire, standpipe connections, wall, w/plugs & chains, single or double, flush, polished brass			4.000	5.000	4.500	2.000
154 135-7290	Fire, standpipe connections, wall, w/plugs & chains, Three way, flush or projecting, polished brass, 64 mm x (3) x 102 mm			4.000	5.000	4.500	2.000
<b>154 145</b>	<b>FIRE PUMPS</b>						
154 145-0200	Fire pump with controller, fittings and relief valve, diesel 47 L/s, 345 kPa, 40 HP, 127 mm pump [5"]	EA	0.50 Steamfitter Foreman 2.00 Steamfitters 0.50 Electrician 1.00 Steamfitter Apprentice 2.00 Tools Set 1.00 Chain Winch 1.00 Gas Welding M.C.	0.450	1.000	0.725	71.111
154 145-0700	Fire pump with controller, fittings and relief valve, diesel 126 L/s, 689 kPa, 170 HP, 150 mm pump [6"]			0.250	0.500	0.375	128.000
154 145-0950	Fire pump with controller, fittings and relief valve, diesel 221 L/s, 689 kPa, 320 HP, 254 mm pump [10"]			0.180	0.500	0.340	177.778
154 145-3200	Fire pump with controller, fittings and relief valve, electric 32 L/s, 345 kPa, 27 HP, 1770 RPM, 100 mm pump			0.550	1.000	0.775	58.182
154 145-3400	Fire pump with controller, fittings and relief valve, electric 47 L/s, 689 kPa, 65 HP, 3550 RPM, 100 mm pump			0.500	1.000	0.750	64.000
154 145-5000	Fire Jockey pump 25 mm, 3 Hp, with control		0.125 Foreman 1.000 Sprinkler Installer 1.000 Sprinkler Apprentice 1.000 Tool Set	1.500	2.000	1.750	5.333
<b>154 160</b>	<b>FIRE VALVES</b>						
154 160-0080	Fire valve, wheel handle, 2068 kPa, 38 mm	EA	1 Sprinkler Installer 1 Tool Set	9.000	10.000	9.500	0.889
154 160-0090	Fire valve, wheel handle, 2068 kPa, 64 mm			5.000	6.000	5.500	1.600
<b>154 170</b>	<b>SPRINKLER SYSTEM COMPONENTS</b>						
154 170-2700	Sprinkler heads, piping not included, Dry, Pendent, 13 mm orifice, 20 mm or 25 mm NPT, 279 mm to 324 mm length	EA	1 Sprinkler Installer 1 Tool Set	12.000	14.000	13.000	0.667
154 170-2720	Sprinkler heads, piping not included, Dry, Pendent, 13 mm orifice, 20 mm or 25 mm NPT, 381 mm to 425 mm length			11.000	13.000	12.000	0.727
154 170-2730	Sprinkler heads, piping not included, Dry, Pendent, 13 mm orifice, 20 mm or 25 mm NPT, 432 mm to 476 mm length	EA	1 Sprinkler Installer 1 Tool Set	11.000	13.000	12.000	0.727
154 170-3600	Sprinkler, Foam-water, pendant or upright, 13 mm NPT, 13 mm orifice			10.000	12.000	11.000	0.800
154 170-3700	Sprinkler, no piping, Standard spray, pendant or upright, brass 330 to 415 K, 13 mm NPT, 13 mm orifice			13.000	15.000	14.000	0.615
154 170-4520	Sprinkler head, no piping, Standard spray, sidewall, horizontal, brass 330 to 415 K, 13 mm NPT, 13 mm orifice			13.000	15.000	14.000	0.315
154 170-4820	Sprinkler head, no piping, Standard spray, recessed pendent, horizontal, brass 330 to 415 K, 13 mm NPT, 13 mm orifice			8.000	9.000	8.500	1.000
154 170-6520	Valves, check, swing, C.I. body, brass fittings, auto. ball drip 102 mm size		0.125 Foreman 1.000 Sprinkler Installer 1.000 Sprinkler Apprentice 1.000 Tool Set	2.000	2.000	2.000	2.000
154 170-6820	Valves, check, water, butterfly type, C.I. body, bronze fittings, 102 mm size			3.000	3.000	3.000	2.667
154 170-7040	Valve, deluge, assembly, incl. trim, pressure, operated relief, emergency release, gauges, 50 mm size			1.750	2.000	1.875	4.571



**DIVISION 15 : MECHANICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
154 170-7060	Valve, deluge, assembly, incl. trim, pressure, operated relief, emergency release, gauges, 76 mm size	↓	↓	1.350	2.000	1.675	5.926
<b>155</b>	<b>HEATING</b>						
<b>155 100</b>	<b>BOILERS</b>						
<b>155 105</b>	<b>BOILERS, GENERAL</b> Prices do not include flue piping, elect. wiring, gas or oil piping, boiler base, pad, or tankless unless noted boiler W: 10 KW = 34 lbs/steam/hr = 33,475 BTU/hr. To convert SFR to BTU rating: Hot water, 150 x SFR, Forced hot water, 180 x SFR, steam, 240 x SFR						
<b>155 110</b>	<b>BOILERS ELECTRIC</b>						
155 110-1160	Steam boiler, Electric fired, including standard controls and trim 60 kW	EA	0.125 Foreman 1.000 Steamfitter 1.000 Steamfitter Apprentice 1.000 Electrician 0.250 Gas Welding M/C 0.250 Chain Winch 1.000 Tool Set	0.750	1.000	0.875	16.000
155 110-1280	Steam boiler, Electric fired, including standard controls and trim 210 kW			0.380	0.500	0.440	31.579
155 110-1380	Steam boiler, Electric fired, including standard controls and trim 510 kW		0.500 Mech. Foreman 2.000 Steamfitter 1.000 Electrician 0.250 Equipment operator 1.000 Steamfitter Apprentice 0.250 Gas Welding M/C 0.250 Crane 11 ton 1.000 Tool Set	0.250	0.500	0.375	48.000
155 110-1480	Steam boiler, Electric fired, including standard controls and trim 1080 kW			0.200	0.500	0.350	60.000
155 110-2100	Boilers, hot water, electric fired, including standard controls & trim 60 kW		0.125 Foreman 1.000 Steamfitter 1.000 Steamfitter Apprentice 1.000 Electrician 0.250 Gas welding M/C 0.250 Chain Winch 1.000 Tool Set	0.900	1.000	0.950	13.333
155 110-2220	Boilers, hot water, electric fired, including standard controls & trim 240 kW			0.450	1.000	0.725	26.667
155 110-2320	Boilers, hot water, electric fired, including standard controls & trim 480 kW	↓	0.500 Mech. Foreman 2.000 Steamfitter 1.000 Electrician 0.250 Equipment Operator 1.000 Steamfitter Apprentice 0.250 Gas welding M/C 0.250 Crane 11 ton 1.000 Tool Set	0.400	1.000	0.700	30.000
<b>155 115</b>	<b>BOILERS, GAS FIRED</b>						
155 115-2000	Steam boiler, Gas fired, standard control, cast iron, with insulated jacket, gross output 24 kW	EA	0.500 Mech. Foreman 2.000 Steamfitter 0.250 Electrician 0.250 Equipment Operator 1.000 Steamfitter Apprentice 0.250 Gas welding M/C 0.250 Crane 11 ton 1.000 Tool Set	1.100	1.000	1.050	10.909
155 115-2240	Steam boiler, Gas fired, standard control, cast iron, with insulated jacket, gross output 224 kW			0.350	1.000	0.675	34.286
155 115-2320	Steam boiler, Gas fired, standard control, cast iron, with insulated jacket, gross output 550 kW			0.220	0.500	0.360	54.545
155 115-3140	Hot water, boiler, Gas fired, standard controls, cast iron, with insulated jacket, gross output 94 kW			0.600	1.000	0.800	20.000
155 115-3380	Hot water, boiler, Gas fired, standard controls, cast iron, with insulated jacket, gross output 960 kW			0.240	0.500	0.370	50.000
155 115-3480	Hot water, boiler, Gas fired, standard controls, cast iron, with insulated jacket, gross output 1788 kW			0.100	0.500	0.300	120.000
155 115-5500	Steam boiler, Gas fired, standard controls, steel, with insulated jacket, gross output 422 kW, including burner			0.360	0.500	0.430	33.333
155 115-5580	Steam boiler, Gas fired, standard controls, steel, with insulated jacket, gross output 900 kW, including burner	↓	↓	0.200	0.500	0.350	60.000
155 115-6240	Hot water, boiler, Gas fired, standard controls, steel, with insulated jacket, gross output 280 kW, including burner & one zone valve	EA	0.500 Mech. Foreman 2.000 Steamfitter 0.250 Electrician 0.250 Equipment Operator 1.000 Steamfitter Apprentice 0.250 Gas welding M/C 0.250 Crane 11 ton 1.000 Tool Set	0.460	1.000	0.730	26.087
155 115-6340	Hot water, boiler, Gas fired, standard controls, steel, with insulated jacket, gross output 880 kW, including burner & one zone valve	↓	↓	0.160	0.500	0.330	75.000
<b>155 120</b>	<b>BOILERS, OIL FIRED</b>						

**DIVISION 15 : MECHANICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
155 120-2060	Steam boiler, Oil fired, standard controls, burner, C.I. with insulated jacket gross output 61 kW	EA	0.500 Mech. Foreman 2.000 Steamfitter 0.250 Electrician 0.250 Equip. Operator 1.000 Steamfitter Apprentice 0.250 Gas Welding M/C 0.250 Crane 11 ton 1.000 Tool Set	0.750	1.000	0.875	16.000
155 120-2180	Steam boiler, Oil fired, standard controls, burner, C.I. with insulated jacket gross output 318 kW			0.350	0.500	0.425	34.285
155 120-2280	Steam boiler, Oil fired, standard controls, burner, C.I. with insulated jacket gross output 880 kW			0.200	0.500	0.350	60.000
155 120-2380	Steam boiler, Oil fired, standard controls, burner, C.I. with insulated jacket gross output 1616 kW			0.110	0.500	0.305	109.091
155 120-6180	Steam boiler, Oil fired, standard controls, burner, Steel with insulated jacket gross output 295 kW			0.350	0.500	0.425	34.286
155 120-6280	Steam boiler, Oil fired, standard controls, burner, Steel with insulated jacket gross output 700 kW			0.180	0.500	0.340	66.667
155 120-7200	Hot water boiler, Oil fired, standard controls, burner, Steel with insulated jacket gross output 246 kW			0.450	1.000	0.725	26.667
155 120-7260	Hot water boiler, Oil fired, standard controls, burner, Steel with insulated jacket gross output 490 kW			0.280	0.500	0.390	42.857
155 120-7320	Hot water boiler, Oil fired, standard controls, burner, Steel with insulated jacket gross output 920 kW			0.140	0.500	0.320	85.714
<b>155 150</b>	<b>SWIMMING POOL HEATERS</b>						
	<b>Not including wiring, external piping, base or pad</b>						
155 150-0060	Pool heaters, Gas fired, gross output, 15 kW	EA	0.500 Mech. Foreman 2.000 Steamfitter 0.250 Electrician 0.250 Equip. Operator 1.000 Steamfitter Apprentice 0.250 Gas Welding M/C 0.250 Crane 11 ton 1.000 Tool Set	3.250	4.000	3.625	3.692
155 150-0200	Pool heaters, Gas fired, gross output, 50 kW			1.000	1.000	1.000	12.000
155 150-0400	Pool heaters, Gas fired, gross output, 470 kW			0.150	0.500	0.325	80.000
155 150-1500	Pool heater, Oil fired, gross output 470 kW			0.150	0.500	0.325	80.000
155 150-2000	Pool heater, Electric, 12 kW, 18 CUM pool		0.500 Mech. Foreman 2.000 Steamfitter 1.000 Electrician 0.250 Equip. Operator 1.000 Steamfitter Apprentice 0.250 Gas Welding M/C 0.250 Crane 11 ton 1.000 Tool Set	3.500	4.000	3.750	3.429
155 150-2020	Pool heater, Electric, 15 kW, 27 CUM pool			3.200	4.000	3.600	3.750
155 150-2040	Pool heater, Electric, 24 kW, 36 CUM pool			3.000	3.000	3.000	4.000
155 150-2100	Pool heater, Electric, 55 kW, 91 CUM pool			1.500	2.000	1.750	8.000
<b>155 200</b>	<b>BOILER ACCESSORIES</b>						
<b>155 260</b>	<b>INDUCED DRAFT FANS</b>						
155 260-1900	Draft fan, hot gas, 588K, variable pitch pulley and motor 300 mm diam. inlet 3/4 HP, 3 phase, 1.4 CUM/s	EA	0.125 Foreman 1.000 Sheet metal worker 0.250 Electrician 1.000 Sheet metal apprentice 1.000 Tool Set	3.000	3.000	3.000	2.667
155 260-1980	Draft fan, hot gas, 588K, variable pitch pulley and motor 600 mm diam. inlet 7.5 HP, 3 phase, 8.4 CUM/s			0.800	1.000	0.800	13.333
<b>155 400</b>	<b>WARM AIR SYSTEMS</b>						
<b>155 401</b>	<b>DUCT FURNACES</b>						
155 401-0100	Duct furnace with burner, control, stainless steel, heat exchanger, gas fired electric ignition, indoor type 35 kW output	EA	0.125 Foreman 1.000 Sheet metal worker 0.250 Electrician 1.000 Sheet metal apprentice 1.000 Tool Set	3.000	3.000	3.000	2.667
155 401-0140	Duct furnace with burner, control, stainless steel, heat exchanger, gas fired electric ignition, indoor type 70 kW output			2.000	2.000	2.000	4.000
155 401-0180	Duct furnace with burner, control, stainless steel, heat exchanger, gas fired electric ignition, indoor type 94 kW output			1.400	2.000	1.700	5.714
155 401-1180	Duct furnace with burner, control, stainless steel, heat exchanger, gas fired electric ignition, outdoor type 132 kW output	EA	0.125 Foreman 1.000 Sheet metal worker 0.250 Electrician 1.000 Sheet metal apprentice 1.000 Tool Set	1.250	1.000	1.125	6.111
<b>155 408</b>	<b>DUCT HEATERS</b>						



**DIVISION 15 : MECHANICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
155 408-0100	Duct heater, electric, finned tabular insert 533 K, 200 mm wide x 150 mm high, 4.0 kW	EA	0.125 Foreman 1.000 Sheet metal worker 0.250 Electrician 1.000 Sheet metal apprentice 1.000 Tools Set	12.000	14.000	13.000	0.667
155 408-0120	Duct heater, electric, finned tabular insert 533 K, 200 mm wide x 300 mm high, 8.0 kW			11.000	13.000	12.000	0.727
155 408-0160	Duct heater, electric, finned tabular insert 533 K, 200 mm wide x 600 mm high, 16.0 kW			10.000	12.000	11.000	0.800
155 408-0180	Duct heater, electric, finned tabular insert 533 K, 200 mm wide x 760 mm high, 20.0 kW			9.000	10.000	9.500	0.889
155 408-0760	Duct heater, electric, finned tabular insert 533 K, 600 mm wide x 600 mm high, 72 kW			7.000	8.000	7.500	1.143
<b>155 420</b>	<b>FURNACES</b>						
155 420-1020	Furnace, electric, standard control, no rough in, electric heat staging, 220 V, 3 kW	EA	0.125 Foreman 1.000 Sheet metal worker 0.250 Electrician 1.000 Sheet metal apprentice 1.000 Tool Set	4.000	5.000	4.500	2.000
155 420-1100	Furnace, electric, standard control, no rough in, electric heat staging, 220 V, 10 kW			3.500	4.000	3.750	2.286
155 420-3020	Furnace, gas, standard control, no rough in or flue piping, direct drive models 13 kW output			3.000	3.000	3.000	2.667
155 420-3060	Furnace, gas, standard control, no rough in or flue piping, direct drive models 22 kW output			2.800	3.000	2.900	2.857
155 420-6020	Furnace, oil, standard control, no rough in or flue piping, atomizing gun type burner, 16 kW output			2.800	3.000	2.900	2.857
155 420-6080	Furnace, oil, standard control, no rough in or flue piping, atomizing gun type burner, 45 kW output			2.400	3.000	2.700	3.333
<b>155 440</b>	<b>HEATING &amp; VENTILATING UNITS</b>						
155 440-0080	Heating and ventilating unit, classroom type including filter, heating/cooling coils, and standard control, 0.36 CUM/s, 7 kW cooling	EA	0.500 Mech. Foreman 2.000 Steamfitter 0.250 Electrician 0.250 Equipment Operator 1.000 Steamfitter Apprentice 0.250 Gas welding M/C 0.250 Crane 11 ton 1.000 Tool Set	2.000	2.000	2.000	6.000
155 440-0140	Heating and ventilating unit, classroom type including filter, heating/cooling coils, and standard control, 0.7 CUM/s, 14 kW cooling			0.900	1.000	0.950	13.333
<b>155 471</b>	<b>SOLAR ENERGY</b>						
155 471-0540	Hot water, solar heating, standard low temperature package, 1 collector, circulator, fittings, 246 L tank, not including piping or fixtures connection.	EA	0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tools Set	0.350	0.500	0.425	22.857
155 471-0620	Hot water, solar heating, standard low temperature package, 1 collector, circulator, fittings, 450 L tank, not including piping or fixtures connection.			0.300	0.500	0.400	26.667
<b>155 600</b>	<b>HEATING SYSTEM ACCESSORIES</b>						
<b>155 601</b>	<b>HEAT EXCHANGERS</b>						
155 601-0120	Heat exchangers, shell & tube type, 4 pass, 19 mm outside diam., copper tubes, Cast iron, heads, Cast iron tube sheet, steel shell, hot water 277 K to 355 K, by steam at 69 kPa, 0.5 L/s	EA	0.125 Foreman 2.000 Steamfitter 0.125 Equip Operator 1.000 Steamfitter apprentice 0.250 Gas welding M/C 0.125 Crane 11 ton 2.000 Tools set	9.000	10.000	9.500	2.111
155 601-0160	Heat exchangers, shell & tube type, 4 pass, 19 mm outside diam., copper tubes, Cast iron, heads, Cast iron tube sheet, steel shell, hot water 277 K to 355 K, by steam at 69 kPa, 2.5 L/s			6.000	7.000	6.500	3.167
155 601-0220	Heat exchangers, shell & tube type, 4 pass, 19 mm outside diam., copper tubes, Cast iron, heads, Cast iron tube sheet, steel shell, hot water 277 K to 355 K, by steam at 69 kPa, 7.6 L/s			1.250	1.000	1.125	15.200
155 601-1020	Heat exchangers, shell & tube type, 4 pass, 19 mm outside diam., copper tubes, Cast iron, heads, Cast iron tube sheet, steel shell, hot water 277 K to 355 K, by water at 366 K, 0.44 L/s			9.000	10.000	9.500	2.111
155 601-1060	Heat exchangers, shell & tube type, 4 pass, 19 mm outside diam., copper tubes, Cast iron, heads, Cast iron tube sheet, steel shell, hot water 277 K to 355 K, by water at 366 K, 2.15 L/s			6.000	7.000	6.500	3.167
155 601-1100	Heat exchangers, shell & tube type, 4 pass, 19 mm outside diam., copper tubes, Cast iron, heads, Cast iron tube sheet, steel shell, hot water 277 K to 355 K, by water at 366 K, 4.7 L/s			2.250	3.000	2.625	8.444
<b>155 610</b>	<b>HEAT TRANSFER PACKAGES</b>						
	<i>Complete, Controls</i>						
155 610-1020	Heat transfer package, hot water, 355 K enter, 366 K leaving, 103 kPa steam, one pump system, 2.2 L/s	EA	0.125 Foreman 2.000 Steamfitter 0.125 Equip Operator 1.000 Steamfitter apprentice 0.250 Gas welding M/C 0.125 Crane 11 ton 2.000 Tools set	0.650	1.000	0.825	29.231



**DIVISION 15 : MECHANICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
155 610-1060	Heat transfer package, hot water, 355 K enter, 366 K leaving, 103 kPa steam, one pump, system, 8.2 L/s			0.500	1.000	0.750	36.000
155 610-1100	Heat transfer package, hot water, 355 K enter, 366 K leaving, 103 kPa steam, one pump, system, 34.7 L/s			0.250	0.500	0.375	76.000
<b>155 630</b>	<b>HYDRONIC HEATING</b>						
155 630-1200	Hydronic heating, radiation panel, baseboard, C.I., fin tube, wall hung with damper, 32 mm copper tube, 100 mm alum. fin, including supports	LM	0.125 Foreman 2.000 Steamfitter 0.125 Equip. Operator 1.000 Steamfitter apprentice 0.250 Gas welding M/c 0.125 Crane 11 ton 2.000 Tools set	18.000	21.000	19.500	1.056
155 630-1250	Hydronic heating, radiation panel, baseboard, C.I., fin tube, wall hung with damper, 32 mm steel tube, 100 mm steel fin, including supports			16.000	18.000	17.000	1.188
155 630-3000	Radiators, cast iron, free standing or wall hung, 6 tube, 635 mm high	SECTION		140.000	161.000	150.500	0.136
<b>155 640</b>	<b>HUMIDIFIERS</b>						
155 640-0540	Humidifier, steam, room or duct, filter, regulators, auto. controls, 220 V, 5 kg/hr	EA	0.125 Foreman 1.000 Steamfitter 1.000 Steamfitter apprentice 0.250 Gas welding M/c 1.000 Tools set	5.000	6.000	5.500	2.000
155 640-0580	Humidifier, steam, room or duct, filter, regulators, auto. controls, 220 V, 15 kg/hr			3.000	3.000	3.000	3.333
155 640-0620	Humidifier, steam, room or duct, filter, regulators, auto. controls, 220 V, 45 kg/hr			2.500	3.000	2.750	4.000
<b>155 651</b>	<b>INSULATION</b>						
155 651-1020	Insulation, Boiler, 38 mm calcium silicate, 13 mm cement finish, 50 mm fiberglass	SQM	0.125 Labor Foreman 1.000 Asbestos Worker 1.000 Asbestos Apprentice 1.000 Tools set	6.000	7.000	6.500	1.333
155 651-3000	Insulation, Duct, blanket type, fiberglass, flexible, fire resistant liner, black coating one side 13 mm thick, 0.9 kg density			30.000	35.000	32.500	0.267
155 651-3060	Insulation, Duct, blanket type, fiberglass, flexible, fire resistant liner, black coating one side 25 mm thick, 0.68 kg density			27.000	31.000	29.000	0.296
155 651-3070	Insulation, Duct, blanket type, fiberglass, flexible, fire resistant liner, black coating one side 38 mm thick, 0.68 kg density			25.000	29.000	27.000	0.320
155 651-3080	Insulation, Duct, blanket type, fiberglass, flexible, fire resistant liner, black coating one side 50 mm thick, 0.68 kg density			22.000	25.000	23.500	0.364
155 651-3520	Insulating, Duct, board type fiberglass, 1.36 kg. density, fire resistant, 1 side, 25 mm thick			12.000	14.000	13.000	0.667
155 651-3540	Insulating, Duct, board type fiberglass, 1.36 kg. density, fire resistant, 1 side, 38 mm thick			10.000	12.000	11.000	0.800
155 651-3560	Insulating, Duct, board type fiberglass, 1.36 kg. density, fire resistant, 1 side, 50 mm thick			9.000	10.000	9.500	0.889
155 651-6840	Insulating, Pipe, fiberglass covering with service jacket 25 mm wall, 13 mm iron pipe size	LM		60.000	69.000	64.500	0.133
155 651-6870	Insulating, Pipe, fiberglass covering with service jacket 25 mm wall, 25 mm iron pipe size			57.000	66.000	61.500	0.140
155 651-6900	Insulating, Pipe, fiberglass covering with service jacket 25 mm wall, 50 mm iron pipe size			52.000	60.000	56.000	0.154
155 651-6920	Insulating, Pipe, fiberglass covering with service jacket 25 mm wall, 76 mm iron pipe size			46.000	53.000	49.500	0.174
155 651-6940	Insulating, Pipe, fiberglass covering with service jacket 25 mm wall, 100 mm iron pipe size			40.000	46.000	43.000	0.200
155 651-7440	Insulating, Pipe, fiberglass covering with service jacket 50 mm wall, 150 mm iron pipe size			25.000	29.000	27.000	0.320
155 651-7460	Insulating, Pipe, fiberglass covering with service jacket 50 mm wall, 200 mm iron pipe size			21.000	24.000	22.500	0.381
155 651-7480	Insulating, Pipe, fiberglass covering with service jacket 50 mm wall, 250 mm iron pipe size			18.000	21.000	19.500	0.444
155 651-7490	Insulating, Pipe, fiberglass covering with service jacket 50 mm wall, 300 mm iron pipe size			16.000	18.000	17.000	0.500
155 651-7880	Insulating, Pipe with flexible Rubber tubing, 10 mm wall, 6 mm iron pipe size			42.000	48.000	45.000	0.190
155 651-7910	Insulating, Pipe with flexible Rubber tubing, 10 mm wall, 13 mm iron pipe size			40.000	46.000	43.000	0.200
155 651-7920	Insulating, Pipe with flexible Rubber tubing, 10 mm wall, 20 mm iron pipe size			40.000	46.000	43.000	0.200
155 651-7930	Insulating, Pipe with flexible Rubber tubing, 10 mm wall, 25 mm iron pipe size			38.000	44.000	41.000	0.211
155 651-7950	Insulating, Pipe with flexible Rubber tubing, 10 mm wall, 38 mm iron pipe size			38.000	44.000	41.000	0.211
155 651-8140	Insulating, Pipe with flexible Rubber tubing, 13 mm wall, 20 mm iron pipe size			32.000	37.000	34.500	0.250
155 651-8170	Insulating, Pipe with flexible Rubber tubing, 13 mm wall, 38 mm iron pipe size			30.000	35.000	32.500	0.267
155 651-8180	Insulating, Pipe with flexible Rubber tubing, 13 mm wall, 50 mm iron pipe size			29.000	33.000	31.000	0.274
155 651-8200	Insulating, Pipe with flexible Rubber tubing, 13 mm wall, 76 mm iron pipe size			28.000	32.000	30.000	0.286
155 651-8300	Insulating, Pipe with flexible Rubber tubing, 20 mm wall, 6 mm iron pipe size			30.000	35.000	32.500	0.267
155 651-8350	Insulating, Pipe with flexible Rubber tubing, 20 mm wall, 25 mm iron pipe size			29.000	33.000	31.000	0.276



**DIVISION 15 : MECHANICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
155 651-8400	Insulating, Pipe with flexible Rubber tubing, 20 mm wall, 76 mm iron pipe size	LM	0.125 Labor Foreman 1.000 Asbestos Worker 1.000 Asbestos Apprentice 1.000 Tools set	28.000	32.000	30.000	0.286
<b>155 671</b>	<b>TANKS      <i>Fiberglass and steel tanks, single or double wall storage, see Div 132-15</i></b>						
155 671-2020	Steel tank, liquid expansion, painted, 20 galon capacity	EA	0.125 Foreman 1.000 Steamfitter 1.000 Steamfitter apprentice 0.250 Gas welding M/c 1.000 Tools set	12.000	14.000	13.000	0.833
155 671-2120	Steel tank, liquid expansion, painted, 85 galon capacity			4.000	5.000	4.500	2.500
155 671-3040	Steel tank, liquid expansion, painted, rubber diaphragm, 50 galon capacity			4.000	5.000	4.500	2.500
155 671-3100	Steel tank, liquid expansion, painted, rubber diaphragm, 150 galon capacity			3.000	3.000	3.000	3.333
155 671-3180	Steel tank, liquid expansion, painted, rubber diaphragm, 500 galon capacity			2.000	2.000	2.000	5.000
<b>155 680</b>	<b>VENT CHIMNEY</b>						
155 680-0140	Chimney vent, gas or all fuel types, double wall, galvanized steel or stainless steel, 150 mm diameter	LM	0.125 Labor Foreman 1.000 Sheet Metal Worker 1.000 Sheet Metal Apprentice 1.000 Tools set	14.000	16.000	15.000	0.571
155 680-0180	Chimney vent, gas or all fuel types, double wall, galvanized steel or stainless steel, 200 mm diameter			12.000	14.000	13.000	0.667
155 680-0260	Chimney vent, gas or all fuel types, double wall, galvanized steel or stainless steel, 400 mm diameter			9.000	10.000	9.500	0.889
155 680-0300	Chimney vent, gas or all fuel types, double wall, galvanized steel or stainless steel, 500 mm diameter		0.125 Labor Foreman 2.000 Sheet Metal Worker 1.000 Sheet Metal Apprentice 1.000 Tools set 1.000 Power Tools	8.000	9.000	8.500	2.000
155 680-0480	Chimney vent, gas or all fuel types, double wall, galvanized steel or stainless steel, 965 mm diameter			6.000	7.000	6.500	2.667
155 680-9020	Vent chimney, prefabricated metal, high temp., (1366 K) steel jacket, acid resistant, refractory lining 11 gauge, straight section 1.2 m long, 250 mm diameter			10.000	12.000	11.000	1.600
155 680-9070	Vent chimney, prefabricated metal, high temp., (1366 K) steel jacket, acid resistant, refractory lining 11 gauge, straight section 1.2 m long, 914 mm diameter			2.300	3.000	2.650	6.957
155 680-9090	Vent chimney, prefabricated metal, high temp., (1366 K) steel jacket, acid resistant, refractory lining 11 gauge, straight section 1.2 m long, 1220 mm diameter			1.750	2.000	1.875	9.143
155 680-9120	Vent chimney accessories; Tee Section; 250mm diameter	EA		3.500	4.000	3.750	4.571
155 680-9140	Vent chimney accessories; Tee Section; 457 mm diameter			1.800	2.000	1.900	8.889
155 680-9170	Vent chimney accessories; Tee Section; 914 mm diameter			0.600	1.000	0.800	26.667
155 680-9220	Vent chimney accessories; Cleanout, 250 mm diameter			2.750	3.000	2.875	5.818
155 680-9320	Vent chimney accessories; Cleanout w/Drain; 254 mm diameter			2.500	3.000	2.750	6.400
155 680-9330	Vent chimney accessories; Elbow, 250 mm diameter			5.000	6.000	5.500	3.200
155 680-9350	Vent chimney accessories; Elbow, 457 mm diameter			3.350	4.000	3.675	4.776
155 680-9380	Vent chimney accessories; Elbow, 914 mm diameter			1.900	2.000	1.950	8.421
155 680-9440	Vent chimney accessories; End cap, 250 mm diameter			12.000	14.000	13.000	1.333
155 680-9490	Vent chimney accessories; End cap, 914 mm diameter	LM	0.125 Labor Foreman 2.000 Sheet Metal Worker 1.000 Sheet Metal Apprentice 1.000 Tools set 1.000 Power Tools	4.000	5.000	4.500	4.000
155 680-9630	Vent chimney, prefabricated metal, high temp., (1366K), 26 gauge aluminized jacket, straight section 1.2 meter long, 250 mm diameter			3.500	4.000	3.750	4.571
155 680-9630	Vent chimney, prefabricated metal, high temp., (1366 K) 26 gauge aluminized jacket, straight section 1.2 meter long, 914 mm diameter			0.700	1.000	0.850	22.857
<b>156</b>	<b>HVAC PIPING SPECIALTIES</b>						
<b>156 200</b>	<b>HEAT / COOL PIPING MISCELLANEOUS</b>						
<b>156 201</b>	<b>AUTOMATIC AIR VENT</b>						
156 201-0060	Automatic air vent Cast iron body, stainless steel internals, float type 13 mm inlet, 2068 kPa	EA	1 Pipe Fitter 1 Tool set	10.000	12.000	11.000	0.800
156 201-0220	Automatic air vent Cast iron body, stainless steel internals, float type 20 mm inlet, 1724 kPa			8.000	9.000	8.500	1.000
156 201-0340	Automatic air vent Cast iron body, stainless steel internals, float type 38 mm inlet, 1724 kPa			5.000	6.000	5.500	1.600
<b>156 205</b>	<b>AIR CONTROL</b>						
156 205-0040	Air control with stainer 50 mm diameter	EA	0.125 Foreman 1.000 Pipe Fitter 1.000 Pipe Fitter Apprentice 1.000 Tools set	4.500	5.000	4.750	1.778



**DIVISION 15 : MECHANICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
156 205-0100	Air control with stainer 75 mm diameter			3.000	3.000	3.000	2.967
156 205-0120	Air control with stainer 100 mm diameter			2.500	3.000	2.750	3.200
156 205-0140	Air control with stainer 150 mm diameter			2.000	2.000	2.000	4.000
<b>156 225</b>	<b>EXPANSION JOINTS</b>						
156 225-0120	Expansion joint, bellow type, neoprene cover, flanged spool, 25 mm diameter	EA	1 Pipe Fitter 1 Tool set	18.000	18.000	17.000	0.500
156 225-0160	Expansion joint, bellow type, neoprene cover, flanged spool, 38 mm diameter			13.000	15.000	14.000	0.615
156 225-0180	Expansion joint, bellow type, neoprene cover, flanged spool, 50 mm diameter			10.000	12.000	11.000	0.800
156 225-0200	Expansion joint, bellow type, neoprene cover, flanged spool, 76 mm diameter			9.000	10.000	9.500	0.889
<b>156 235</b>	<b>FLEXIBLE METAL HOSE</b>						
156 235-0160	Flexible metal hose connector, bronze braided, bronze ends, standard length, 20 mm diameter x 300 mm	EA	1 Pipe Fitter 1 Tool set	10.000	12.000	11.000	0.800
156 235-0180	Flexible metal hose connector, bronze braided, bronze ends, standard length, 25 mm diameter x 457 mm	EA	1 Pipe Fitter 1 Tool set	8.000	9.000	8.500	1.000
156 235-0220	Flexible metal hose connector, bronze braided, bronze ends, standard length, 50 mm diameter x 457 mm			5.000	6.000	5.500	1.600
<b>156 240</b>	<b>HEATING CONTROL VALVES</b>						
156 240-0120	Heat control valve, radiator supply, 20 mm diameter	EA	1 Plumber 1 Tool set	18.000	21.000	19.500	0.444
156 240-0140	Heat control valve, radiator supply, 25 mm diameter			16.000	18.000	17.000	0.500
156 240-0160	Heat control valve, radiator supply, 32 mm diameter			12.000	14.000	13.000	0.667
<b>156 260</b>	<b>PRESSURE REGULATOR</b>						
156 260-3030	Pressure regulator, steam, high capacity, bronze body, stainless steel trim threaded, 20 mm diameter	EA	1 Plumber 1 Tool set	18.000	21.000	19.500	0.444
156 260-3040	Pressure regulator, steam, high capacity, bronze body, stainless steel trim threaded, 25 mm diameter			16.000	18.000	17.000	0.500
156 260-3080	Pressure regulator, steam, high capacity, bronze body, stainless steel trim threaded, 38 mm diameter			10.000	12.000	11.000	0.800
156 260-3140	Pressure regulator, steam, high capacity, bronze body, stainless steel trim threaded, 76 mm diameter			4.000	5.000	4.500	2.000
156 260-3540	Pressure regulator, steam, high capacity, flanged connection, iron body 861 kPa W.S.P. 100 mm diameter			2.000	2.000	2.000	4.000
<b>156 270</b>	<b>STEAM CONDENSATE METER</b>						
156 270-0100	Steam condensate meter, 227 kg/hr	EA	1 Pipe Fitter 1 Tool set	11.000	13.000	12.000	0.727
156 270-0140	Steam condensate meter, 680.4 kg/hr			5.500	6.000	5.750	1.455
<b>156 272</b>	<b>STEAM TRAP</b>						
156 272-0050	Steam trap, cast iron body, threaded, inverted bucket 13 mm pipe size	EA	1 Plumber 1 Tool set	9.000	10.000	9.500	0.889
156 272-0200	Steam trap, cast iron body, threaded inverted bucket 25 mm pipe size			7.000	8.000	7.500	1.143
156 272-0220	Steam trap, cast iron body, threaded inverted bucket 32 mm pipe size			6.000	7.000	6.500	1.333
<b>156 600</b>	<b>STRAINERS</b>						
<b>156 608</b>	<b>STRAINERS, Y TYPE BRONZE BODY:</b>						
156 608-0070	Strainers, Y type bronze body screwed, 1034 kPa, 10 mm pipe, size	EA	1 Plumber 1 Tool set	18.000	21.000	19.500	0.444
156 608-0100	Strainers, Y type bronze body screwed, 1034 kPa, 13 mm pipe, size			15.000	17.000	16.000	0.533
156 608-0140	Strainers, Y type bronze body screwed, 1034 kPa, 25 mm pipe size			12.000	14.000	13.000	0.667
156 608-0180	Strainers, Y type bronze body screwed, 1034 kPa, 50 mm pipe size			10.000	12.000	11.000	0.800
156 608-0220	Strainers, Y type bronze body screwed, 1034 kPa, 76 mm pipe size		0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tools Set	12.000	14.000	13.000	0.667
156 608-1000	Strainers, Y type bronze body flanged, 1034 kPa, 38 mm pipe size		1 Plumber 1 Tool set	8.000	9.000	8.500	1.000
156 608-1020	Strainers, Y type bronze body flanged, 1034 kPa, 50 mm pipe size		"	6.000	7.000	6.500	1.333
156 608-1100	Strainers, Y type bronze body flanged, 1034 kPa, 150 mm pipe size		0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tools Set	1.750	2.000	1.875	4.571
<b>156 612</b>	<b>STRAINERS, Y TYPE IRON</b>						
156 612-0100	Strainers, Y type iron body screwed, 1724 kPa, 13 mm pipe size	EA	1 Plumber 1 Tool set	14.000	16.000	15.000	0.571
156 612-0160	Strainers, Y type iron body screwed, 1724 kPa, 38 mm pipe size			9.000	10.000	9.500	0.889
156 612-0220	Strainers, Y type iron body screwed, 1724 kPa, 76 mm pipe size		0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tools Set	8.000	9.000	8.500	1.000
156 612-0240	Strainers, Y type iron body screwed, 1724 kPa, 100 mm pipe size		"	4.000	5.000	4.500	2.000
156 612-1020	Strainers, Y type iron body flanged, 862 kPa, 50 mm pipe size		1 Plumber 1 Tool set	6.000	7.000	6.500	1.333



**DIVISION 15 : MECHANICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVR.	AVRG. E. H.
156 612-1100	Strainers, Y type iron body flanged, 862 kPa, 150 mm pipe size	↓	0.125 Plumber Foreman 1.000 Plumber 1.000 Plumber Apprentice 1.000 Tools Set	1.750	2.000	1.875	4.571
<b>157 AIR CONDITIONING / VENTILATING</b>							
<b>157 100 A.C. &amp; VENT. UNITS</b>							
<b>157 125 CENTRAL STATION AIR-HANDLING UNIT</b>							
157 125-1100	Central station AHU, chilled water, modular, capacity at 3.55 m/s face velocity 0.6 CUM/s	EA	0.125 Skilled Foreman 2.000 Steamfitter (HVAC) 0.125 Equip. Operator 0.500 Welder 0.500 Electrician 1.000 Steam Fitter Apprentice 0.125 Crane 11 ton 0.500 Welding M/C 2.000 Standard Tools	2.250	3.000	2.625	9.393
157 125-1300	Central station AHU, chilled water, modular, capacity at 3.55 m/s face velocity 1.5 CUM/s	↓	↓	1.400	2.000	1.700	15.000
157 125-1500	Central station AHU, chilled water, modular, capacity at 3.55 m/s face velocity 3.8 CUM/s	↓	↓	1.000	1.000	1.000	21.000
157 125-1700	Central station AHU, chilled water, modular, capacity at 3.55 m/s face velocity 9.44 CUM/s	EA	0.125 Skilled Foreman 2.000 Steamfitter (HVAC) 0.125 Equip. Operator 0.500 Welder 0.500 Electrician 1.000 Steam Fitter Apprentice 0.125 Crane 11 ton 0.500 Welding M/C 2.000 Standard Tools	0.500	1.000	0.750	42.000
157 125-1900	Central station AHU, chilled water, modular, capacity at 3.55 m/s face velocity 15.8 CUM/s	↓	↓	0.350	0.500	0.425	60.000
157 125-2100	Central station AHU, chilled water, modular, capacity at 3.55 m/s face velocity 29.7 CUM/s	↓	↓	0.250	0.500	0.375	84.000
157 125-2195	Central station AHU, chilled water, modular, capacity at 3.55 m/s face velocity 15.8 CUM/s, including hot water heating coil	↓	↓	0.330	0.500	0.415	63.636
157 125-2200	For hot water heating coil, add	↓	↓				
<b>157 130 COMPUTER ROOM UNITS</b>							
157 130-1240	Computer room units, air cooled, includes remote condenser but not interconnecting tubing for refrigerant, 35 kW	EA	0.125 Skilled Foreman 2.000 Steam Fitter (HVAC) 0.125 Equip. Operator 0.500 Welder 0.500 Electrician 1.000 Steam Fitter Apprentice 0.125 Crane 11 ton 0.500 Welding M/C 2.000 Standard Tools	0.450	1.000	0.725	46.667
157 130-1360	Computer room units, air cooled, includes remote condenser but not interconnecting tubing for refrigerant, 80 kW	EA	↓	0.350	0.500	0.425	60.000
<b>157 150 FAN COIL AIR CONDITIONING</b>							
157 150-0100	FCU, cabinet mounted, with controls and filter, chilled water, 1.8 kW cooling	EA	0.125 Skilled Foreman 2.000 Steam Fitter (HVAC) 0.125 Equip. Operator 0.500 Welder 0.500 Electrician 1.000 Steam Fitter Apprentice 0.125 Crane 11 ton 0.500 Welding M/C 2.000 Standard Tools	13.000	15.000	14.000	1.615
157 150-0120	FCU, cabinet mounted, with controls and filter, chilled water, 3.5 kW cooling	↓	↓	9.500	11.000	10.250	2.211
157 150-0180	FCU, cabinet mounted, with controls and filter, chilled water, 10.5 kW cooling	↓	↓	6.500	7.000	6.750	3.231
157 150-0200	FCU, cabinet mounted, with controls and filter, chilled water, 35 kW cooling	↓	↓	3.000	3.000	3.000	7.000
157 150-0240	FCU, cabinet mounted, with controls and filter, chilled water, 70 kW cooling	↓	↓	0.900	1.000	0.950	23.333
157 150-1000	FCU, cabinet mounted, with controls and filter, direct expansion, 17.6 kW cooling for use with/air cooled condensing	↓	↓	5.000	6.000	5.500	4.200
157 150-1060	FCU, cabinet mounted, with controls and filter, direct expansion, 70 kW cooling for use with/air cooled condensing	↓	↓	0.800	1.000	0.900	26.250
<b>157 160 HEAT PUMPS</b>							
157 160-1080	Heat pump, air to air, Split system, not including curbs, pads, or ductwork 26 kW cooling, 10 kW heat @ 255 K	EA	0.125 Skilled Foreman 2.000 Steam fitter (HVAC) 0.125 Equip. Operator 1.000 Electrician 1.000 Steam Fitter Apprentice 0.125 Crane 11 ton 2.000 Standard Tools	2.000	2.000	2.000	8.500







**DIVISION 15 : MECHANICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
157 160-1120	Heat pump, air to air, Split system, not including curbs, pads, or ductwork 54 kW cooling, 19 kW heat @ 255 K			0.28	0.500	0.390	60.714
157 160-1180	Heat pump, air to air, Split system, not including curbs, pads, or ductwork 140 kW cooling, 57 kW heat @ 255 K			0.110	0.500	0.305	154.545
157 160-1640	Heat pump, air to air, Single Package, not including curbs, pads, or plenums 26 kW cooling, 10 kW heat @ 255 K			0.650	1.300	0.825	26.154
157 160-1640	Heat pump, air to air, Single Package, not including curbs, pads, or plenums 54 kW cooling, 16 kW heat @ 255 K			0.320	0.500	0.410	53.125
157 160-2140	Heat pump, water source to air, single package, 7 kW cooling, 6 kW heat @ 297 K			2.500	3.000	2.750	6.800
157 160-2220	Heat pump, water source to air, single package, 17 kW cooling, 8 kW heat @ 297 K			1.250	1.000	1.125	13.800
<b>157 170 PACKAGED TERMINAL AIR CONDITIONER</b>							
157 170-0240	Package terminal air conditioner cabinet, wall sleeve, 3.5 kW cooling 4 kW heat	EA	0.125 Skilled Foreman 2.00 Steam Fitter (HVAC) 0.125 Equip. Operator 1.000 Electrician 1.000 Steam Fitter Apprentice 0.125 Crane 11 ton 2.000 Standard Tools	6.000	7.000	6.500	2.833
157 170-0260	Package terminal air conditioner cabinet, wall sleeve, 4.4 kW cooling 4 kW heat			5.000	6.000	5.500	3.400
<b>157 180 ROOF TOP AIR CONDITIONERS</b>							
157 180-1145	Roof top AC with std. controls, curb, Single zone, 21 kW cooling	EA	0.250 Skilled Foreman 3.000 Steam Fitter (HVAC) 1.000 Welder 1.000 Electrician 0.125 Equip. Operator 2.000 Steam Fitter Apprentice 0.125 Crane 11 ton 1.000 Welding Machine 3.000 Standard Tools	1.250	1.000	1.125	26.400
157 180-1160	Roof top AC with std. controls, curb, Single zone, 35 kW cooling			0.750	1.000	0.875	44.000
157 180-1200	Roof top AC with std. controls, curb, Single zone, 70 kW cooling			0.450	1.000	0.725	73.333
157 180-1220	Roof top AC with std. controls, curb, Single zone, 105 kW cooling			0.350	0.500	0.425	94.286
157 180-1265	Roof top AC with std. controls, curb, Single zone, 210 kW cooling			0.170	0.500	0.335	194.118
157 180-1280	Roof top AC with std. controls, curb, Single zone, 363 kW cooling			0.120	0.500	0.310	275.000
157 180-2120	Roof top AC with std. controls, curb, Multi zone, 70 kW cooling			0.320	0.500	0.410	103.125
157 180-2200	Roof top AC with std. controls, curb, Multi zone, 140 kW cooling			0.180	0.500	0.340	183.333
157 180-2280	Roof top AC with std. controls, curb, Multi zone, 368 kW cooling			0.100	0.500	0.300	330.000
<b>157 185 SELF-CONTAINED SINGLE PACKAGE</b>							
157 185-0220	Self-contained AC package unit, Air cooled, including remote condenser 17.6 kW	EA	0.250 Skilled Foreman 3.000 Steam Fitter (HVAC) 1.000 Welder 1.000 Electrician 0.125 Equip. Operator 2.000 Steam Fitter Apprentice 0.125 Crane 11 ton 1.000 Welding Machine 3.000 Standard Tools	1.750	2.000	1.875	18.857
157 185-0240	Self-contained AC package unit, Air cooled, including remote condenser 35 kW			1.250	1.000	1.125	26.400
157 185-0260	Self-contained AC package unit, Air cooled, including remote condenser 70 kW			1.150	1.000	1.075	28.696
157 185-0280	Self-contained AC package unit, Air cooled, including remote condenser 105 kW			1.000	1.000	1.000	33.000
157 185-0340	Self-contained AC package unit, Air cooled, including remote condenser 210 kW			0.550	1.000	0.775	60.000
157 185-1140	Self-contained AC package unit, Water cooled not including cooling tower 35 kW			1.150	1.000	1.075	28.696
157 185-1160	Self-contained AC package unit, Water cooled not including cooling tower 70 kW			1.000	1.000	1.000	33.000
157 185-1180	Self-contained AC package unit, Water cooled not including cooling tower 105 kW			0.850	1.000	0.925	38.824
<b>157 190 WATER CHILLERS</b>							
157 190-0240	Water chiller, Centrifugal liquid chiller, Water cooled, not including water tower packaged hermetic 200 Ton cooling	EA	0.250 Skilled Foreman 3.000 Steam Fitter (HVAC) 1.000 Welder 1.000 Electrician 0.250 Equip. Operator 3.000 Steam Fitter Apprentice 0.250 Crane 11 ton 1.000 Welding Machine 3.000 Standard Tools	0.055	0.100	0.078	618.182
157 190-0280	Water chiller, Centrifugal liquid chiller, Water cooled, not including water tower packaged hermetic 400 Ton cooling			0.048	0.100	0.074	715.789
157 190-0300	Water chiller, Centrifugal liquid chiller, Water cooled, not including water tower, packaged hermetic 750 Ton cooling			0.038	0.100	0.069	906.667



**DIVISION 15 : MECHANICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
157 190-0320	Water chiller, Centrifugal, liquid chiller, Water cooled, not including water tower, packaged hermetic 1000 Ton cooling			0.025	0.100	0.063	1360.000
157 190-0550	Water chiller, Reciprocating, packaged with air cooled condenser, 75 Ton cooling			0.220	0.500	0.360	154.545
157 190-0600	Water chiller, Reciprocating, packaged with air cooled condenser, 100 Ton cooling			0.180	0.500	0.340	188.889
157 190-0630	Water chiller, Reciprocating, packaged with air cooled condenser, 125 Ton cooling			0.140	0.500	0.320	242.857
157 190-0640	Water chiller, Reciprocating, packaged with air cooled condenser, 150 Ton cooling			0.130	0.500	0.315	261.538
157 190-0660	Water chiller, Reciprocating, packaged with air cooled condenser, 200 Ton cooling			0.090	0.100	0.095	377.778
157 190-1160	Water chiller, Reciprocating, Water cooled, multi compressor, semi-hermetic tower not included, 100 Ton cooling			0.220	0.500	0.360	154.545
157 190-1200	Water chiller, Reciprocating, Water cooled, multi compressor, semi-hermetic tower not included, 140 Ton cooling			0.160	0.400	0.280	212.500
157 190-1210	Water chiller, Reciprocating, Water cooled, multi compressor, semi-hermetic tower not included, 160 Ton cooling			0.140	0.400	0.270	242.857
157 190-1580	Water chiller, Reciprocating, Water cooled, dual compressor, direct drive, semi-hermetic tower not included 150 Ton cooling			0.130	0.400	0.265	261.538
157 190-1620	Water chiller, Reciprocating, Water cooled, dual compressor, direct drive, semi-hermetic tower not included 200 Ton cooling	EA	0.250 Skilled Foreman 3.000 Steam Fitter (HVAC) 1.000 Welder 1.000 Electrician 0.250 Equip. Operator 3.000 Steam Fitter Apprentice 0.250 Crane 11 ton 1.000 Welding Machine 3.000 Standard Tools	0.090	0.100	0.095	377.778
157 190-1660	Water chiller, Reciprocating, Water cooled, dual compressor, direct drive, semi-hermetic tower not included 225 Ton cooling			0.090	0.100	0.095	377.778
157 190-3100	Water chiller, Packaged, with remote air cooled condenser 100 ton			0.160	0.500	0.330	212.500
157 190-3150	Water chiller, Packaged, with remote air cooled condenser 140 ton			0.110	0.400	0.255	309.091
<b>157 200</b>	<b>SYSTEM COMPONENTS</b>						
<b>157 225</b>	<b>CONDENSERS</b>						
157 225-0240	Condenser, air cooled, belt drive, propeller fan, 40 Ton	EA	0.250 Skilled Foreman 3.000 Steam Fitter (HVAC) 1.000 Welder 1.000 Electrician 0.250 Equip. Operator 3.000 Steam Fitter Apprentice 0.250 Crane 11 ton 1.000 Welding Machine 3.000 Standard Tools	0.950	1.000	0.975	35.789
157 225-0280	Condenser, air cooled, belt drive, propeller fan, 60 Ton			0.850	1.000	0.825	52.308
157 225-0400	Condenser, air cooled, belt drive, propeller fan, 100 Ton			0.550	1.000	0.775	61.818
157 225-0380	Condenser, air cooled, belt drive, propeller fan, 157 Ton			0.500	1.000	0.750	68.000
157 225-0600	Condenser, air cooled, belt drive, propeller fan, 235 Ton			0.200	0.500	0.350	170.000
157 225-0700	Condenser, air cooled, belt drive, propeller fan, 314 Ton			0.160	0.400	0.280	212.500
157 225-0800	Condenser, air cooled, belt drive, propeller fan, 470 Ton			0.110	0.400	0.255	309.091
157 225-0900	Condenser, air cooled, belt drive, propeller fan, 630 Ton			0.095	0.100	0.098	357.895
157 225-1660	Condenser, air cooled, direct drive, propeller fan, 10 Ton			3.500	4.000	3.750	9.714
157 225-1760	Condenser, air cooled, direct drive, propeller fan, 40 Ton			1.000	1.000	1.000	34.000
157 225-1820	Condenser, air cooled, direct drive, propeller fan, 76 Ton			0.600	1.000	0.800	56.667
157 225-1880	Condenser, air cooled, direct drive, propeller fan, 105 Ton			0.500	1.000	0.750	68.000
<b>157 197</b>	<b>WINDOW UNIT AIR CONDITIONER:</b>						
157 197-2000	Window A/C unit thru the wall, 1.5 ton	EA	0.125 Foreman 1.000 Electrician 1.000 Common laborer 1.000 Tools Set	6.000	7.000	6.500	1.333
157 197-2100	Window A/C unit thru the wall, 2 ton			4.000	5.000	4.500	2.000
157 197-2200	Window A/C unit thru the wall, 3 ton			4.000	5.000	4.500	2.000
<b>157 240</b>	<b>COOLING TOWERS</b>						
157 240-0100	Cooling tower, package unit, galv. steel or stainless steel, draw thru, single flow, belt drive 60 Ton	EA	0.250 Skilled Foreman 3.000 Steam Fitter (HVAC) 1.000 Welder 1.000 Electrician 0.250 Equip. Operator 3.000 Steam Fitter Apprentice 0.250 Crane 11 ton 1.000 Welding Machine 3.000 Standard Tools	1.000	1.000	1.000	34.000



**DIVISION 15 : MECHANICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
157 240-0250	Cooling tower, package unit, galv. steel or stainless steel, draw thru, single flow, belt drive, 125 Ton			0 800	1 000	0 950	37 776
157 240-1500	Cooling tower, package unit, galvanized steel or stainless steel, induced air, double flow, gear drive, 150 Ton			0 800	1 000	0 900	42 500
157 240-2000	Cooling tower, package unit, galvanized steel or stainless steel, induced air, double flow, gear drive, 300 Ton			0 700	1 000	0 850	48 571
157 240-2100	Cooling tower, package unit, galvanized steel or stainless steel, induced air, double flow, gear drive, 600 Ton			0 400	1 000	0 700	85 000
<b>157 250</b>	<b>DUCTWORK</b> <i>Fabricated rectangular, includes fittings, joints, supports</i>						
157 250-0110	Duct aluminum alloy, fabricated & installed	KG	0 125 Labor Foreman 2 000 Sheet Metal Worker 1 000 Sheet Metal Apprentice 1 000 Tools Set 1 000 Power Tools	45 000	52 000	48 500	0 356
157 250-0500	Duct galvanized steel, fabricated & installed			80 000	92 000	86 000	0 200
157 250-1000	Duct stainless steel type 304, under 45 kg			60 000	69 000	64 500	0 267
157 250-1020	Duct stainless steel type, fabricated & installed			80 000	92 000	86 000	0 200
157 250-1500	Round duct, flexible, coated fiberglass 75 mm diameter	LM		165 000	190 000	177 500	0 097
157 250-156 0	Round duct, flexible, coated fiberglass 150 mm diameter			115 000	132 000	123 500	0 139
157 250-1600	Round duct, flexible, coated fiberglass 200 mm diameter	LM	0 125 Labor Foreman 2 000 Sheet Metal Worker 1 000 Sheet Metal Apprentice 1 000 Tools Set 1 000 Power Tools	85 000	98 000	91 500	0 188
157 250-1640	Round duct, flexible, coated fiberglass 250 mm diameter			65 000	75 000	70 000	0 246
157 250-1660	Round duct, flexible, coated fiberglass 300 mm diameter			50 000	58 000	54 000	0 320
<b>157 290</b>	<b>FANS</b>						
157 290-0050	Fan, axial flow, compact, low sound, 64 mm S.P., (3500 CFM), 1.8 CUM/s, 5 HP	EA	0 125 Foreman 1 000 Sheet Metal Worker 1 000 Sheet Metal Apprentice 0 250 Electrician 1 000 Tools Set	2 800	3 000	2 900	2 857
157 290-0100	Fan, axial flow, compact, low sound, 64 mm S.P., (10500 CFM), 5 CUM/s, 7.5 HP			2 000	2 000	2 000	4 000
157 290-0120	Fan, axial flow, compact, low sound, 64 mm S.P., (15600 CFM), 7.3 CUM/s, 10 HP			1 300	1 000	1 150	6 154
157 290-0260	Fan, in-line centrifugal, supply/exhaust booster, aluminum wheel/hub, disconnect switch, 6 mm S.P., (1380 CFM), 0.651 CUM/s, 300 mm dia conn			1 600	2 000	1 800	5 000
157 290-0300	Fan, in-line centrifugal, supply/exhaust booster, aluminum wheel/hub, disconnect switch, 6 mm S.P., (2580 CFM), 1.208 CUM/s, 457 mm diameter connection			0 850	1 000	0 925	9 412
157 290-0320	Fan, in-line centrifugal, supply/exhaust booster, aluminum wheel/hub, disconnect switch, 6 mm S.P., (3480 CFM), 1.643 CUM/s, 500 mm diameter connection			0 650	1 000	0 825	12 308
157 290-2580	Ceiling fan, right angle, extra quiet, 3 mm S.P., (885 CFM), 0.418 CUM/s			12 000	14 000	13 000	0 867
157 290-2620	Ceiling fan, right angle, extra quiet, 3 mm S.P., (2960 CFM), 1.397 CUM/s			9 000	10 000	9 500	0 889
157 290-3020	Ceiling fan, paddle blade air circulator, 3 speed switch, 1067 mm, (5000 CFM), 2.36 CUM/s high, (3000 CFM), 1.416 CUM/s low			4 500	5 000	4 750	1 778
157 290-3040	Ceiling fan, paddle blade air circulator, 3 speed switch, 1321 mm, (6500 CFM), 3.068 CUM/s high, (4000 CFM), 1.888 CUM/s low			3 200	4 000	3 600	2 500
157 290-4640	Ventilator, roof type, corrosive fume resistant, plastic, centrifugal, V belt drive, motor, 6 mm S.P., (895 CFM - 1/3 HP), 0.422 CUM/s, 248 W			4 000	5 000	4 500	2 000
157 290-4680	Ventilator, roof, corrosive fume resistant, plastic, centrifugal, V belt drive, motor, 6 mm S.P., (2240 CFM, 1 HP), 1.057 CUM/s, 746 W			2 500	3 000	2 750	3 200
157 290-4720	Ventilator, roof, corrosive fume resistant, plastic, centrifugal, V belt drive, motor, 6 mm S.P., (11760 CFM, 5 HP), 5.549 CUM/s, 3.75 KW			0 800	1 000	0 900	10 000
157 290-6140	Fan, propeller exhaust, wall shutter, 6 mm S.P., direct drive two speed, (1000 CFM, 1/8 HP), 0.472 CUM/s, 93 W			6 000	7 000	6 500	1 333
157 290-6670	Fan, residential, bath exhaust, grille, back draft damper (110 CFM), 0.052 CUM/s			16 000	18 000	17 000	0 500
157 290-7160	Roof exhauster, centrifugal, aluminum housing, 300 mm galvanized curb, bird screen, back draft damper, 6 mm S.P. direct drive (1450 CFM), 0.684 CUM/s, 0.109 SQM			3 500	4 000	3 750	2 266
157 290-7180	Roof exhauster, centrifugal, aluminum housing, 300 mm galvanized curb, bird screen, back draft damper, 6 mm S.P. direct drive (2050 CFM), 0.968 CUM/s, 0.165 SQM			3 250	4 000	3 625	2 482
157 290-7260	Roof exhauster, centrifugal, aluminum housing, 305 mm galvanized curb, bird screen, back draft damper, 6 mm S.P. V-belt drive (8525 CFM), 4.024 CUM/s, 0.506 SQM			2 500	3 000	2 750	3 200
<b>157 400</b>	<b>ACCESSORIES</b>						
<b>157 401</b>	<b>AIR FILTERS</b>						
157 401-1190	Chemical media filter, industrial air fume & odor scrubber unit with pump & motor corrosion resistant, PVC construction, single pack, horizontal 12000 CFM	EA	0 125 Labor Foreman 2 000 Sheet Metal Worker 1 000 Sheet Metal Apprentice 1 000 Tools Set 1 000 Power Tools	4 000	5 000	4 500	4 000
157 401-1230	Chemical media filter, industrial air fume & odor scrubber unit with pump & motor corrosion resistant, PVC construction, single pack, horizontal 30000 CFM			1 800	2 000	1 900	8 889



**DIVISION 15 : MECHANICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
157 401-1370	Chemical media filter, industrial air fume & odor scrubber unit with pump & motor corrosion resistant, PVC construction, double pack, horizontal 12000 CFM			3.250	4.000	3.625	4.923
157 401-1410	Chemical media filter, industrial air fume & odor scrubber unit with pump & motor corrosion resistant, PVC construction, double pack, horizontal 30000 CFM			1.250	1.000	1.125	12.800
157 401-1600	Chemical media filter, industrial air fume & odor scrubber unit with pump & motor corrosion resistant, PVC construction, single pack, vertical 24000 CFM			2.000	2.000	2.000	8.000
157 401-1750	Chemical media filter, industrial air fume & odor scrubber unit with pump & motor corrosion resistant, PVC construction, double pack, vertical 24000 CFM			1.850	2.000	1.925	8.649
157 401-2150	Air filter, Electronic air cleaner, self-contained, 0.236 CUM/s, 1000 CFM		0.125 Foreman 1.000 Sheet Metal worker 1.000 Tools Set	2.000	2.000	2.000	4.000
157 401-2200	Air filter, electronic air cleaner, self-contained, 0.472 CUM/s, 1400 CFM			1.800	2.000	1.900	4.444
157 401-2250	Air filter, electronic air cleaner, self-contained, 0.566 CUM/s, 2000 CFM			1.650	2.000	1.825	4.648
<b>157 450</b>	<b>DIFFUSERS</b>						
	<i>Aluminum, opposed blade damper unless noted</i>						
157 450-0500	Diffuser linear, ceiling/sidewall, perforated, 600 mm x 600 mm, panel size 150 mm x 150 mm	EA	0.125 Foreman 1.000 Sheet Metal worker 1.000 Tools Set	12.000	14.000	13.000	0.667
157 450-0520	Diffuser linear, ceiling/sidewall, perforated, 600 mm x 600 mm, panel size 200 mm x 200 mm			11.000	13.000	12.000	0.727
157 450-0540	Diffuser linear, ceiling/sidewall, perforated, 600 mm x 600 mm, panel size 250 mm x 250 mm			10.000	12.000	11.000	0.800
157 450-0600	Diffuser linear, ceiling/sidewall, perforated, 600 mm x 600 mm, panel size 457 mm x 457 mm			8.000	9.000	8.500	1.000
157 450-1020	Diffuser, rectangular, 1 to 4 way blow, 300 mm x 150 mm			11.000	13.000	12.000	0.727
157 450-1100	Diffuser, rectangular, 1 to 4 way blow, 610 mm x 300 mm			8.000	9.000	8.500	1.000
157 450-1160	Diffuser, rectangular, 1 to 4 way blow, 533 mm x 533 mm	EA	0.125 Foreman 1.000 Sheet Metal worker 1.000 Tools Set	6.000	7.000	6.500	1.333
157 450-1520	Diffuser, round, butterfly damper, 200 mm diameter [8"]			12.000	14.000	13.000	0.667
157 450-1580	Diffuser, round, butterfly damper, 356 mm diameter [14"]			8.000	9.000	8.500	1.000
157 450-2060	Diffuser, T bar mount, 600 mm x 600 mm lay-in frame, 380 mm x 380 mm			9.000	10.000	9.500	0.889
157 450-2080	Diffuser, T bar mount, 600 mm x 600 mm lay-in frame, 457 mm x 457 mm			8.000	9.000	8.500	1.000
<b>157 460</b>	<b>GRILLES</b>						
157 460-1080	Grille, aluminum, air return, 400 mm x 200 mm	EA	0.125 Foreman 1.000 Sheet Metal worker 1.000 Tools Set	15.000	18.000	17.000	0.500
157 460-1120	Grille, aluminum, air return, 600 mm x 300 mm			13.000	15.000	14.000	0.615
157 460-1280	Grille, aluminum, air return, 910 mm x 600 mm			11.000	13.000	12.000	0.727
<b>157 470</b>	<b>REGISTERS</b>						
157 470-1020	Register, for air supply, ceiling/wall, opposing blade damper, anodized aluminum one or two way deflection, adj. curved face bars 200 mm x 100 mm	EA	0.125 Foreman 1.000 Sheet Metal worker 1.000 Tools Set	20.000	23.000	21.500	0.400
157 470-1240	Register, for air supply, ceiling/wall, opposing blade damper, anodized aluminum one or two way deflection, adj. curved face bars 508 mm x 150 mm			13.000	15.000	14.000	0.615
157 470-1350	Register, for air supply, ceiling/wall, opposing blade damper, anodized aluminum one or two way deflection, adj. curved face bars 610 mm x 457 mm			9.000	10.000	9.500	0.889
157 470-4140	Register, for air supply, floor, opposing blade damper, anodized aluminum one or two way deflection, adj. curved face bars 250 mm x 250 mm			15.000	17.000	16.000	0.533
157 470-4240	Register, for air supply, floor, opposing blade damper, anodized aluminum one or two way deflection, adj. curved face bars 356 mm x 508 mm			11.000	13.000	12.000	0.727
<b>157 480</b>	<b>DUCT ACCESSORIES</b>						
157 480-0050	Duct accessories, air extractors, 300 mm x 100 mm	EA	0.125 Foreman 1.000 Sheet Metal worker 1.000 Tools Set	18.000	21.000	19.500	0.444
157 480-0200	Duct accessories, air extractors, 508 mm x 200 mm			12.000	14.000	13.000	0.667
157 480-0280	Duct accessories, access door, insulated, 300 mm x 300 mm			7.000	8.000	7.500	1.143
157 480-3240	Duct accessories, fire damper, curtain type, vertical, 406 mm x 356 mm			13.000	15.000	14.000	0.615
157 480-3400	Duct accessories, fire damper, curtain type, vertical, 610 mm x 508 mm			6.000	7.000	6.500	1.333
157 480-6000	Duct accessories, multi-blade dampers, opposed blade, 300 mm x 300 mm			16.000	18.000	17.000	0.500
157 480-6080	Duct accessories, multi-blade dampers, opposed blade, 610 mm x 610 mm			6.000	7.000	6.500	1.333
157 480-6180	Duct accessories, multi-blade dampers, opposed blade, 1219 mm x 910 mm	EA	0.125 Labor Foreman 2.000 Sheet Metal Worker 1.000 Sheet Metal Apprentice 1.000 Tools Set 1.000 Power Tools	6.000	9.000	8.500	2.000
157 480-7020	Duct accessories, splitter damper assembly, self-locking, 910 mm rod		0.125 Foreman 1.000 Sheet Metal worker 1.000 Tools Set	16.000	18.000	17.000	0.500
157 480-7060	Duct accessories, splitter damper assembly, self-locking, 1830 mm rod			14.000	16.000	15.000	0.571



**DIVISION 15 : MECHANICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
157 480-8260	Duct accessories, multi-blade dampers, parallel blade, 760 mm x 457 mm	↓	↓	6.000	7.000	6.500	1.333
<b>157 482</b>	<b>LOUVERS</b>						
157 482-2020	Louvers, aluminum, extruded, with screen, mill finish, for cooling tower and mechanical eqpt., screens, standard weight	SQM	0.125 Foreman 1.000 Sheet Metal Worker 1.000 Tools Set	3.000	3.000	3.000	2.667
157 482-2020	Louvers, aluminum, extruded, with screen, mill finish, dual combination automatic or manual or electric operation, intake or exhaust	↓	↓	1.750	2.000	1.875	4.571
157 482-3000	Louver, aluminum, extruded, with screen, mill finish, fixed blade, mullion type, stormproof or vertical line	↓	↓	2.250	3.000	2.625	3.556
<b>157 490</b>	<b>VENTILATORS</b>						
157 490-0500	Ventilator, base, damper & bird screen, rotary syphon, galvanized, 150 mm neck diameter, 0.087 CUM/s, in 8 km/hr wind	EA	0.125 Labor Foreman 2.000 Sheet Metal Worker 1.000 Sheet Metal Apprentice 1.000 Tools Set 1.000 Power Tools	20.000	23.000	21.500	0.800
157 490-0660	Ventilator base, damper & bird screen, rotary syphon, galvanized, 610 mm neck diameter, 0.722 CUM/s, in 8 km/hr wind	↓	↓	10.000	12.000	11.000	1.600
157 490-0720	Ventilator, base, damper & bird screen, rotary syphon, galvanized, 1067 mm neck diameter, 2.124 CUM/s in 8 km/hr wind	↓	↓	5.000	6.000	5.500	3.200
<b>157 600</b>	<b>MISCELLANEOUS</b>						
<b>157 601</b>	<b>BALANCING AIR</b>						
157 601-0900	Balancing, air, heating and ventilating equipment central plan	EA	1.00 Mech. Foreman 2.00 HVAC Technicians 3.00 Common Laborers 1.00 Set Testing Tools 2.00 Tools Set	30.000	35.000	32.500	0.800
157 601-2000	Balancing, air, air conditioning equipment central plan	↓	↓	15.000	17.000	16.000	1.600
157 601-3000	Balancing, air, air supply & return units, registers, diffusers, grilles, etc	↓	↓	10.000	12.000	11.000	2.400
<b>157 604</b>	<b>BALANCING, WATER</b>						
157 604-0050	Balancing water, HVAC system, air cooled condenser (evaporative)	EA	1.00 Mech. Foreman 2.00 HVAC Technicians 3.00 Common Laborers 1.00 Set Testing Tools 2.00 Tools Set	3.000	3.000	3.000	8.000
157 604-0200	Balancing water, HVAC system, chiller	↓	↓	1.000	1.000	1.000	24.000
157 604-0500	Balancing water, HVAC system, cooling tower	↓	↓	1.500	2.000	1.750	16.000
157 604-0600	Balancing water, HVAC system, fan coil unit, unit ventilator	↓	↓	5.000	6.000	5.500	4.800
157 604-0700	Balancing water, HVAC system, fin tube and radiant panels	↓	↓	4.000	5.000	4.500	6.000
157 604-0800	Balancing water, HVAC system, main and duct re-heat coils	↓	↓	4.000	5.000	4.500	6.000
157 604-0810	Balancing water, HVAC system, heat exchanger	↓	↓	4.000	5.000	4.500	6.000
157 604-1000	Balancing water, HVAC system, pumps	↓	↓	2.000	2.000	2.000	12.000
157 604-1100	Balancing water, HVAC system, unit heater	↓	↓	5.000	6.000	5.500	4.800
<b>157 610</b>	<b>DUST COLLECTION SYSTEM</b>						
157 610-0220	Dust collection system, commercial/industrial, central vacuum units includes stand, filters and motorized shaker, 0.472 CUM/s, 250 mm inlet, 3 HP	EA	0.125 Foreman 1.000 Sheet Metal Worker 1.000 Sheet Metal Apprentice 0.250 Electrician 1.000 Tools Set	1.750	2.000	1.875	4.571
157 610-1120	Dust collection system, vacuum tubing, galvanized 76 mm OD, 16 ga.	LM	0.125 Laborer Foreman 2.000 Sheet Metal Worker 1.000 Sheet Metal Apprentice 1.000 Tools Set 1.000 Power Tools	150.000	173.000	161.500	0.107
157 610-1140	Dust collection system, vacuum tubing, galvanized 100 mm OD, 16 ga	↓	↓	140.000	161.000	150.500	0.114
157 610-1160	Dust collection system, vacuum tubing, galvanized 150 mm OD, 14 ga	↓	↓	110.000	127.000	118.500	0.145
157 610-1190	Dust collection system, vacuum tubing, galvanized 300 mm OD, 12 ga.	↓	↓	45.000	52.000	48.500	0.356
157 610-1200	Dust collection system, vacuum tubing, galvanized 356 mm OD, 12 ga	↓	↓	30.000	35.000	32.500	0.533
157 610-1956	Vacuum, hose, flexible wire reinforced rubber 76 mm dia	↓	↓	140.000	161.000	150.500	0.114
157 610-1980	Vacuum, hose, flexible wire reinforced rubber 150 mm dia	↓	↓	110.000	127.000	118.500	0.145
157 610-2130	Vacuum tubing 90/45 degree elbow size 76 mm dia.	↓	↓	75.000	86.000	80.500	0.213
157 610-2170	Vacuum tubing 90/45 degree elbow size 150 mm dia	EA	↓	50.000	58.000	54.000	0.320
157 610-3470	Vacuum tubing compression coupling, galvanized, neoprene gasket size 54 mm dia	↓	↓	52.000	60.000	56.000	0.308
157 610-3490	Vacuum tubing compression coupling, galvanized, neoprene gasket size 76 mm dia	↓	↓	45.000	52.000	48.500	0.356
157 610-3530	Vacuum tubing compression coupling, galvanized, neoprene gasket size 150 mm dia	↓	↓	30.000	35.000	32.500	0.533
157 610-3830	Vacuum tubing air gate valve, galvanized, neoprene gasket size 76 mm dia	↓	↓	30.000	35.000	32.500	0.533
157 610-3850	Vacuum tubing air gate valve, galvanized, neoprene gasket size 150 mm dia	↓	↓	22.000	25.000	23.500	0.727



A decorative geometric pattern, resembling a complex tessellation or Islamic geometric art, is located in the top right corner of the page. It features a series of interlocking lines forming star-like and polygonal shapes, with some areas filled with a fine grid pattern. The pattern is rendered in a light gray color against a white background.

# Division 16

## Electrical

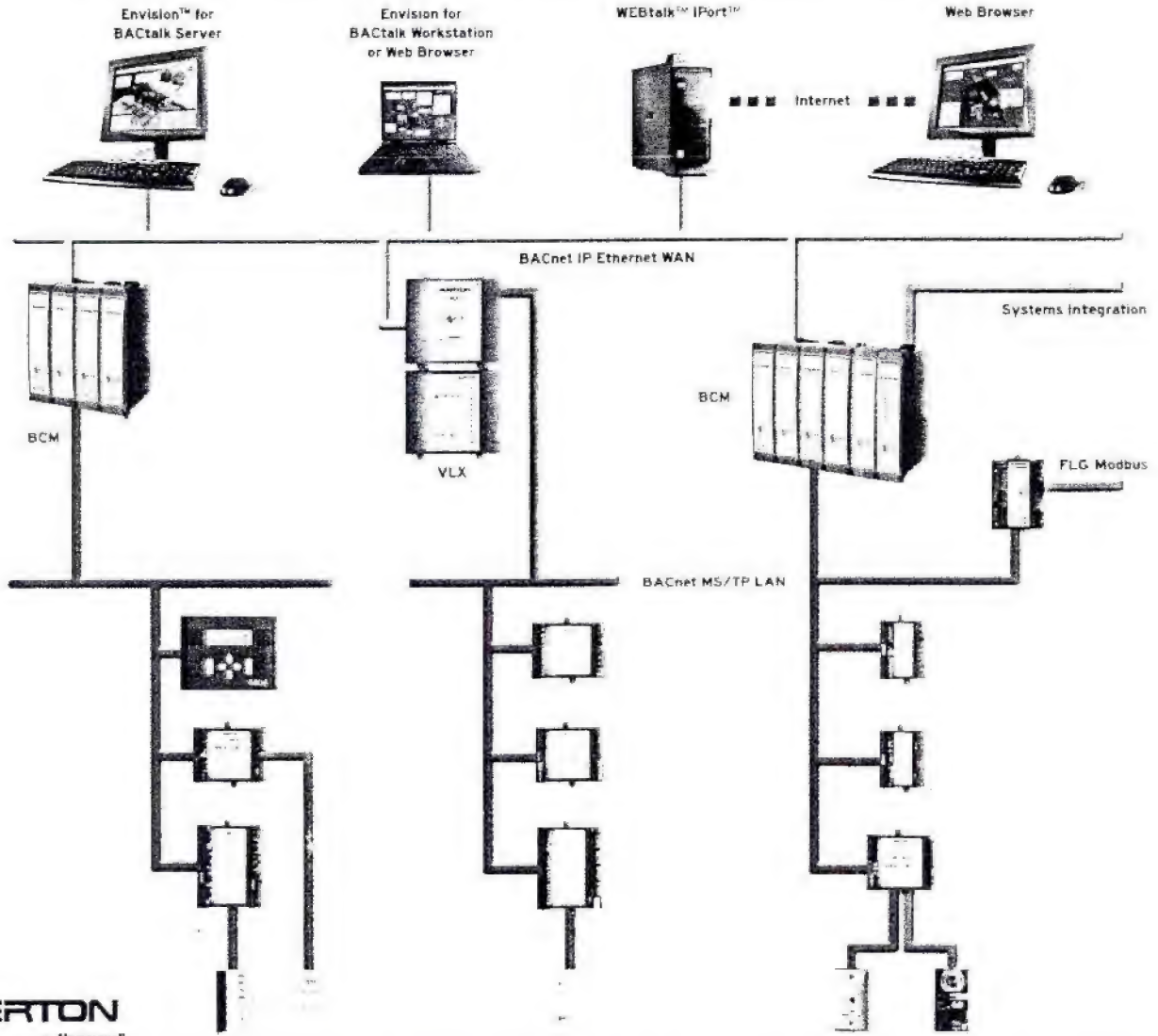


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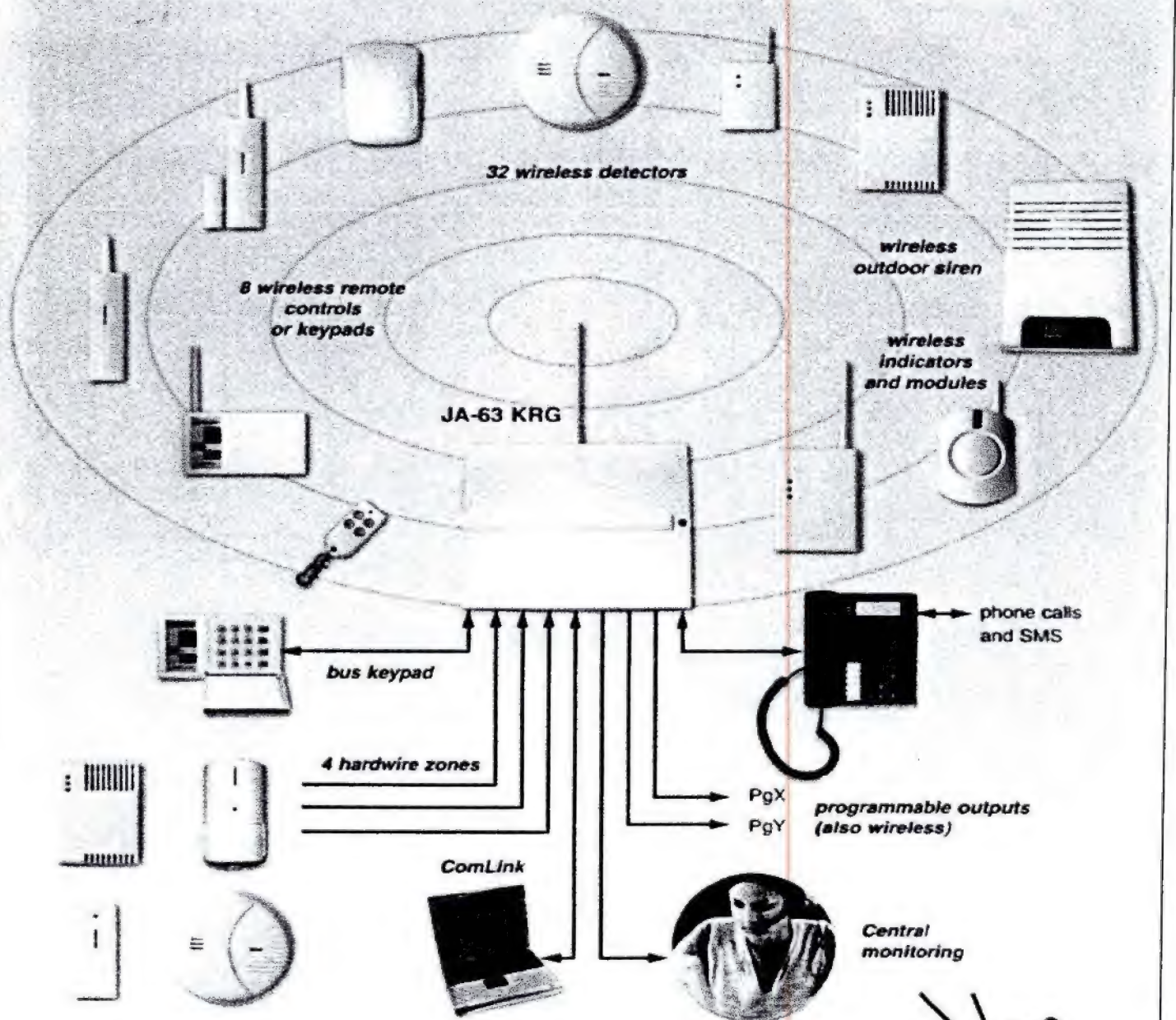
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## **Division 16.. Electrical..**

### **Estimating Tips:**

#### **General**

Estimators for this division item shall have full knowledge of the system and working knowledge used, prepare a complete take-off quantities, code requirements, specifications, and SCECO requirements.

#### **160 Raceways:**

Conduit should be taken off in three main categories: power distribution, branch power, and branch lighting, so the estimator can concentrate on systems and components, therefore making it easier to ensure all items have been accounted for. For cost modifications for elevated conduit installation, add the percentage to labor according to the height of installation for all and only the quantities exceeding the different height levels and number of building floors.

#### **161 Conductors & Grounding:**

Remember that aluminum wiring of equal capacity is larger in diameter than copper and may require larger conduit. If more than three wires at a time are being pulled, deduct percentages from the labor hours of that grouping of wires.

#### **162 Boxes & Wiring Devices:**

The estimator should take the weights of materials into consideration when completing a take-off. Topics to consider include:

- How will the materials be supported ?
- How high will the support structure have to reach ?
- Will the final support structure be able to withstand the total burden ?
- Is the support material included or separate from the fixture, equipment and material specified ?

#### **163 Motors, Starters, Boards & Switches:**

Estimator shall include all supporting systems for these items, whether it is a foundation, bracket or a piece of wood.

#### **164 Transformers & Bus Ducts:**

Never forget to include the equipment cost for such installation, whether scaffolding, lifts or cranes.

### **165 Lighting:**

Productivity rate for lighting fixtures varies with the number of fixtures included in a single room.

Estimators are advised to increase productivity rate of lighting fixtures in large rooms including more than six (6) fixtures.

### **168 Special Electrical System:**

Usually most of these systems are let to specialized contractors, provisions for special installation requirements shall be consulted.

### **169 Utilities:**

Usually these items are let to specialty contractors, whether for transmission lines and accessories of specialized high voltage equipment. Productivity varies with site conditions, hilly, plain, easy access, and nearby roads. Site investigation prior pricing such items is very important. Equipment supports, foundations, metal, etc.. shall not be overlooked.



**DIVISION 16: ELECTRICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
<b>160</b>	<b>RACEWAYS</b>						
<b>160 100</b>	<b>CABLE TRAYS</b>						
<b>160 102</b>	<b>CABLE TRAY GENERAL</b>						
160 102-0050	Cable tray for elevated installation higher than 4.6 m, floor height & up to 6 m add	PERCENT	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Tools Set				
160 102-0100	Cable tray for elevated installation higher than 4.6 m, floor height & from 6.1 to 8 m floor height add						
160 102-0700	Cable tray, galv. steel, With fittings & supports, 100 mm deep, 100 mm rung spacing, For more than 2 floors building, Add to above items Per each additional floor.						
<b>160 105</b>	<b>CABLE TRAY LADDER:</b>						
160 105-0200	Cable tray ladder, galv. steel, With fittings & supports, 100 mm deep, 100 mm rung spacing, 300 mm wide; 2 floors building, 4.6 m floor to floor	LM	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Tools Set	14.720	17.00	15.86	0.543
160 105-0400	Cable tray ladder, galv. steel, With fittings & supports, 100 mm deep, 100 mm rung spacing, 450 mm wide; 2 floors building, 4.6 m floor to floor			12.880	15.00	13.94	0.621
160 105-0600	Cable tray ladder, galv. steel, With fittings & supports, 100 mm deep, 100 mm rung spacing, 600 mm wide; 2 floors building, 4.6 m floor to floor			11.780	14.00	12.89	0.679
<b>160 110</b>	<b>CABLE TRAY SOLID: 4.6 m floor to floor height.</b>						
160 110-0170	Cable tray solid, galv. steel, With fittings & supports, 100 mm deep 150 mm wide; 2 floor building.	LM	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Tools Set	13.800	16.00	14.90	0.580
160 110-0200	Cable tray solid, galv. steel, With fittings & supports, 150 mm deep, 300 mm wide; 2 floor building.			12.650	15.00	13.83	0.632
160 110-0600	Cable tray solid, galv. steel, With fittings & supports, 150 mm deep, 600 mm wide; 2 floor building.			9.420	11.00	10.21	0.849
<b>160 115</b>	<b>CABLE TRAY ACCESSORIES:</b>						
160 115-0100	Cable tray Elbow 150 mm wide	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Power/Tools Set	6.000	7.00	6.50	1.333
160 115-0200	Cable tray Elbow 300 mm wide			4.000	5.00	4.50	2.000
160 115-0400	Cable tray Elbow 600 mm wide			3.000	3.00	3.00	2.667
<b>160 150</b>	<b>WIREWAY:</b>						
160 150-0200	Wireway screw cover with fittings and supports, 100 mm x 100 mm; 2 floors building.	LM	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Power/Tools Set	13.000	15.00	14.00	0.615
160 150-0400	Wireway screw cover with fittings and supports, 150 mm x 150 mm; 2 floors building.			11.000	13.00	12.00	0.727
160 150-0600	Wireway screw cover with fittings and supports, 200 mm x 200 mm; 2 floors building.			8.000	9.00	8.50	1.000
<b>160 200</b>	<b>CONDUITS</b>						
<b>160 202</b>	<b>CONDUIT GENERAL:</b>						
160 202-0050	Conduit elevated installation higher than 4.6 m, floor height & up to 6 m add	PERCENT	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Power/Tools Set				
160 202-0100	Conduit elevated installation higher than 4.6 m, floor height & from 6.1 to 8 m floor height add						
160 202-0100	Conduit installation higher than 4.6 m, floor height & from 8.1 to 10 m floor height add						
160 202-0700	Conduit elevated installation, For more than 2 floors building, Add to above items Per each additional floor.						
<b>160 205</b>	<b>CONDUIT:</b>						
160 205-0300	Conduit Aluminium, exposed, in 2 story building, includes 1 termination, 1 elbow every 6 meters & 1 clamp every 2.75 m., 15 mm diameter (1/2")	LM	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Conduit Power Tools	32.600	37.00	34.80	0.245
160 205-0500	Conduit Aluminium, exposed, in 2 story building, includes 1 termination, 1 elbow every 6 meters & 1 clamp every 2.75 m., 20 mm diameter (3/4")			29.500	34.00	31.75	0.271
160 205-0700	Conduit Aluminium, exposed, in 2 story building, includes 1 termination, 1 elbow every 6 meters & 1 clamp every 2.75 m., 25 mm diameter (1")			24.700	28.00	26.35	0.324
160 205-1030	Conduit Aluminium, exposed, in 2 story building, includes 1 termination, 1 elbow every 6 meters & 1 clamp every 2.75 m., 38 mm diameter (1-1/2")			22.450	26.00	24.23	0.356
160 205-1050	Conduit Aluminium, exposed, in 2 story building, includes 1 termination, 1 elbow every 6 meters & 1 clamp every 2.75 m., 50 mm diameter (2")			21.900	25.00	23.45	0.365
160 205-1140	Conduit Aluminium, exposed, in 2 story building, includes 1 termination, 1 elbow every 6 meters & 1 clamp every 2.75 m., 100 mm diameter (4")			10.300	12.00	11.15	0.777
160 205-1750	Conduit Galv. Rigid Steel, exposed, in 2 story building, includes 1 termination, 1 elbow every 6 meters & 1 clamp every 2.75 m., 15 mm diameter (1/2")			28.990	33.00	31.00	0.276
160 205-1770	Conduit Galv. Rigid Steel, exposed, in 2 story building, includes 1 termination, 1 elbow every 6 meters & 1 clamp every 2.75 m., 20 mm diameter (3/4")			26.790	31.00	28.90	0.299



DIVISION 16: ELECTRICAL							
CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
160 205-1800	Conduit Galv. Rigid Steel, exposed, in 2 story building, includes 1 termination, 1 elbow every 6 meters & 1 clamp every 2.75 m., 25 mm diameter ( 1")			22.500	26.00	24.25	0.356
160 205-1850	Conduit Galv. Rigid Steel, exposed, in 2 story building, includes 1 termination, 1 elbow every 6 meters & 1 clamp every 2.75 m., 38 mm diameter ( 1-1/2")			16.770	19.00	17.89	0.477
160 205-1870	Conduit Galv. Rigid Steel, exposed, in 2 story building, includes 1 termination, 1 elbow every 6 meters & 1 clamp every 2.75 m., 50 mm diameter ( 2")	LM	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Conduit Power Tools	13.700	16.00	14.85	0.584
160 205-1930	Conduit Galv. Rigid Steel, exposed, in 2 story building, includes 1 termination, 1 elbow every 6 meters & 1 clamp every 2.75 m., 76 mm diameter ( 3")			8.930	10.00	9.47	0.896
160 205-1970	Conduit Galv. Rigid Steel, exposed, in 2 story building, includes 1 termination, 1 elbow every 6 meters & 1 clamp every 2.75 m., 100 mm diameter ( 4")			6.140	7.00	6.57	1.303
160 205-2530	Conduit Intermediate Steel (IMC), exposed, in 2 story building, includes 1 termination, 1 elbow every 6 meters & 1 clamp every 2.75 m., 20 mm diameter ( 3/4")			29.500	34.00	31.75	0.271
160 205-2550	Conduit Intermediate Steel (IMC), exposed, in 2 story building, includes 1 termination, 1 elbow every 6 meters & 1 clamp every 2.75 m., 25 mm diameter ( 1")			24.700	28.00	26.35	0.324
160 205-2570	Conduit Intermediate Steel (IMC), exposed, in 2 story building, includes 1 termination, 1 elbow every 6 meters & 1 clamp every 2.75 m., 32 mm diameter ( 1-1/4")			21.900	25.00	23.45	0.365
160 205-2630	Conduit Intermediate Steel (IMC), exposed, in 2 story building, includes 1 termination, 1 elbow every 6 meters & 1 clamp every 2.75 m., 50 mm diameter ( 2")			15.100	17.00	16.05	0.530
160 205-2650	Conduit Intermediate Steel (IMC), exposed, in 2 story building, includes 1 termination, 1 elbow every 6 meters & 1 clamp every 2.75 m., 64 mm diameter ( 2-1/2")			12.500	14.00	13.25	0.640
160 205-2700	Conduit Intermediate Steel (IMC), exposed, in 2 story building, includes 1 termination, 1 elbow every 6 meters & 1 clamp every 2.75 m., 90 mm diameter ( 3-1/2")			8.400	10.00	9.20	0.952
160 205-5000	Conduit Electric Metallic Tubing (EMT), exposed, in 2 story building, includes 1 termination, 1 elbow every 6 meters & 1 clamp every 2.75 m., 15 mm diameter ( 1/2")			53.600	62.00	57.80	0.149
160 205-5200	Conduit Electric Metallic Tubing (EMT), exposed, in 2 story building, includes 1 termination, 1 elbow every 6 meters & 1 clamp every 2.75 m., 20 mm diameter ( 3/4")			48.900	56.00	52.45	0.164
160 205-5040	Conduit Electric Metallic Tubing (EMT), exposed, in 2 story building, includes 1 termination, 1 elbow every 6 meters & 1 clamp every 2.75 m., 25 mm diameter ( 1")			40.400	46.00	43.20	0.198
160 205-5060	Conduit Electric Metallic Tubing (EMT), exposed, in 2 story building, includes 1 termination, 1 elbow every 6 meters & 1 clamp every 2.75 m., 32 mm diameter ( 1-1/4")			33.900	39.00	36.45	0.236
160 205-5080	Conduit Electric Metallic Tubing (EMT), exposed, in 2 story building, includes 1 termination, 1 elbow every 6 meters & 1 clamp every 2.75 m., 38 mm diameter ( 1-1/2")			30.200	35.00	32.60	0.265
160 205-5100	Conduit Electric Metallic Tubing (EMT), exposed, in 2 story building, includes 1 termination, 1 elbow every 6 meters & 1 clamp every 2.75 m., 50 mm diameter ( 2")			24.700	28.00	26.35	0.324
160 230	CONDUIT IN CONCRETE SLAB:						
160 230-3250	Conduit in concrete slab; PVC Sch 40; With terminations, fittings & supports, 20 mm diameter ( 3/4")	LM	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Conduit Power Tools	44.500	51.00	47.75	0.180
160 230-3270	Conduit in concrete slab; PVC Sch 40; With terminations, fittings & supports, 25 mm diameter ( 1")			37.850	44.00	40.93	0.211
160 230-3300	Conduit in concrete slab; PVC Sch 40; With terminations, fittings & supports, 32 mm diameter ( 1-1/4")			33.400	38.00	35.70	0.240
160 230-3330	Conduit in concrete slab; PVC Sch 40; With terminations, fittings & supports, 38 mm diameter ( 1-1/2")			26.720	31.00	28.86	0.299
160 230-4400	Conduit in concrete slab; Galv. Rigid Steel; With terminations, fittings & supports, 20 mm diameter ( 3/4")			27.350	31.00	29.18	0.293
160 230-4450	Conduit in concrete slab; Galv. Rigid Steel; With terminations, fittings & supports, 25 mm diameter ( 1")			22.900	26.00	24.45	0.349
160 230-4600	Conduit in concrete slab; Galv. Rigid Steel; With terminations, fittings & supports, 38 mm diameter ( 1-1/2")			17.130	20.00	18.57	0.467
160 230-4800	Conduit in concrete slab; Galv. Rigid Steel; With terminations, fittings & supports, 50 mm diameter ( 2")			13.990	16.00	15.00	0.572
160 240	CONDUIT IN TRENCH: For excavation or backfill see DIV. 022200						
160 240-0200	Conduit, galvanized rigid steel in trench underground with fittings & terminations, no excavation or backfill, 50 mm diameter (2")	LM	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Conduit Power Tools	49.800	57.00	53.40	0.161
160 240-0600	Conduit, galvanized rigid steel in trench underground with fittings & terminations, no excavation or backfill, 76 mm diameter (3")			32.480	37.00	31.74	0.246
160 240-1000	Conduit, galvanized rigid steel in trench underground with fittings & terminations, no excavation or backfill, 100 mm diameter (4")			22.340	26.00	24.17	0.358
160 275	FLEXIBLE CONDUITS FOR MOTOR CONNECTIONS:						
160 275-0040	Flexible Conduit With watertight fittings both ends; 0.6 meter Length Size 20 mm (3/4")	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Tools Set	14.000	16.00	15.00	0.571
160 275-0080	Flexible Conduit With watertight fittings both ends; 0.6 meter Length Size 25 mm ( 1")			10.000	12.00	11.00	0.800
160 275-0160	Flexible Conduit With watertight fittings both ends; 0.6 meter Length Size 38 mm ( 1-1/2")			7.000	8.00	7.50	1.143
160 275-0200	Flexible Conduit With watertight fittings both ends; 0.6 meter Length Size 50 mm ( 2")			5.000	6.00	5.50	1.600
160 290	WIREMOLD RACEWAY:						



# **DIVISION 16: ELECTRICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
160 290-0110	Wiremold, raceway, surface, metal, straight section No. 700	LM	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Power Tools Set	42.000	48.00	45.00	0.190
160 290-0600	Wiremold, raceway, surface, metal, straight section No. 2000, base & cover			36.000	41.00	38.50	0.222
160 290-0800	Wiremold, raceway, surface, metal, straight section No. 3000, base & cover			31.500	36.00	33.75	0.254
160 290-2400	Wiremold fitting; ELBOW & cover			48.000	55.00	51.50	0.187
160 290-2900	Wiremold fitting; TEE connector			30.000	35.00	32.50	0.267
160 290-3000	Wiremold fitting; Switch box	LM	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Power Tools Set	20.000	23.00	21.50	0.400
160 290-3600	Wiremold fitting; Junction box			20.000	23.00	21.50	0.400
<b>160 500</b>	<b>DUCTS</b>						
<b>160 540</b>	<b>TRENCH DUCT:</b>						
160 540-0200	Trench duct, steel with cover adjustable depths to 100mm, straight, single compartment, 300 mm wide	LM	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Power Tools	6.500	7.00	6.75	1.231
160 540-0600	Trench duct, steel with cover adjustable depths to 100mm, straight, single compartment, 600 mm wide			5.500	6.00	5.75	1.455
160 540-1000	Trench duct, steel with cover adjustable depths to 100mm, straight, single compartment, 900 mm wide			4.000	5.00	4.50	2.000
160 540-1400	Trench duct fitting; horizontal or vertical Elbow, 300 mm wide	EA		4.000	5.00	4.50	2.000
160 540-2200	Trench duct fitting; horizontal or vertical Elbow, 600 mm wide			2.500	3.00	2.75	3.200
160 540-3800	Trench duct; Cross fitting, 300 mm wide			2.500	3.00	2.75	3.200
160 540-4200	Trench duct; Cross fitting, 600 mm wide			1.500	2.00	1.75	5.333
160 540-5000	Trench duct fitting; End closure, 300 mm wide			8.000	9.00	8.50	1.000
160 540-5400	Trench duct fitting; End closure, 600 mm wide			6.000	7.00	6.50	1.333
160 540-6200	Trench duct fitting; TEE connection, 300 mm wide			2.500	3.00	2.75	3.200
160 540-8200	Trench duct fitting; Riser & cabinet connector, 900 mm wide			4.000	5.00	4.50	2.000
160 540-8400	Trench duct fitting; Insert assembly, cell to conduit adapter, 32 mm			20.000	23.00	21.50	0.400
<b>160 560</b>	<b>UNDERFLOOR DUCT:</b>						
160 560-0400	Floor trunking 35mm x 80mm with 22mm or 35mm inserts at 600mm O.C.	LM	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Power Tools	36.000	41.00	38.50	0.222
160 560-0600	Floor trunking 35mm x 180mm, super duct with 22mm or 35mm inserts at 600mm O.C.			30.000	35.00	32.50	0.267
160 560-0800	Floor trunking fittings; Junction box, single duct, 1 level, 80mm			6.000	7.00	6.50	1.333
160 560-1000	Floor trunking fittings; Junction box, single duct, 1 level, 180mm			4.000	5.00	4.50	2.000
160 560-1400	Floor trunking fittings; Junction box, 2 duct, 1 level, 180mm			3.000	3.00	3.00	2.667
160 560-1600	Floor trunking fittings; Junction box, triple duct, 1 level, 80mm			3.000	3.00	3.00	2.667
160 560-1800	Floor trunking fittings; Insert to conduit adapter, 19mm x 25mm			40.000	46.00	43.00	0.200
160 560-2200	Floor trunking fitting; Support, super duct cell 180mm wide			20.000	23.00	21.50	0.400
160 560-2400	Floor trunking fitting; Support, double cell 80mm wide			20.000	23.00	21.50	0.400
160 560-2800	Floor trunking fitting; Vertical Elbow, standard duct 80 mm	EA		14.000	16.00	15.00	0.571
160 560-3000	Floor trunking fitting; Vertical Elbow, super duct 180 mm			11.000	13.00	12.00	0.727
160 560-3400	Floor trunking fitting; Cabinet connector, super duct 180mm			32.000	37.00	34.50	0.250
160 560-3600	Floor trunking fitting; Conduit adapter, 25mm to 32mm			34.000	39.00	36.50	0.235
160 560-3800	Floor trunking fitting; Conduit adapter, 50mm to 32mm			30.000	35.00	32.50	0.267
160 560-4000	Floor trunking fitting; Low tension Outlet, (telephone, computer, etc.)			12.000	14.00	13.00	0.667
160 560-4200	Floor trunking fitting; Receptacle outlet			12.000	14.00	13.00	0.667
<b>161</b>	<b>CONDUCTORS &amp; GROUNDING</b>						
<b>161 100</b>	<b>CONDUCTORS</b>						
<b>161 105</b>	<b>ARMORED CABLE:</b>						
161 105-0050	1 KV wire armored Cable, With PVC jacket, in cable tray; copper; 4 x 6 mm <sup>2</sup>	LM	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Tools Set	209.000	240.00	224.50	0.038
161 105-0250	1 KV wire armored Cable, With PVC jacket, in cable tray; copper; 3 x 50 + 25 mm <sup>2</sup>			93.000	107.00	100.00	0.086
161 105-0400	1 KV wire armored Cable, With PVC jacket, in cable tray; copper; 3 x 120 + 70 mm <sup>2</sup>			64.000	74.00	69.00	0.125



# **DIVISION 16: ELECTRICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
161 105-0550	1 KV wire armored Cable, With PVC jacket,in cable tray;copper; 3 x 240 + 120 mm2			46.000	53.00	49.50	0.174
161 105-0600	1 KV wire armored Cable, With PVC jacket,in cable tray;copper; 3 x 300 + 150 mm2			37.000	43.00	40.00	0.216
161 105-1700	1 KV wire armored Cable, With PVC jacket,in cable tray;aluminium; 3 x 50 + 25 mm2			102.000	117.00	109.50	0.078
161 105-2300	1 KV wire armored Cable, With PVC jacket,in cable tray;aluminium; 3 x 240 + 120 mm2			51.000	59.00	55.00	0.157
161 105-2500	1 KV wire armored Cable, With PVC jacket,in cable tray;aluminium; 3 x 300 + 150 mm2			41.000	47.00	44.00	0.195
161 105-5000	15 KV wire armored Cable,Shielded & With PVC jacket,in cable tray;copper; 3 x 25 mm2			68.000	78.00	73.00	0.118
161 105-5150	15 KV wire armored Cable,Shielded & With PVC jacket,in cable tray;copper; 3 x 95 mm2			57.000	66.00	61.50	0.140
161 105-5200	15 KV wire armored Cable,Shielded & With PVC jacket,in cable tray;copper; 3 x 120 mm2	LM	0.125 Electrical Foreman 1.000 Special Electrician 1.000 Helper 1.000 Tools Set	53.000	61.00	57.00	0.151
161 105-5300	15 KV wire armored Cable,Shielded & With PVC jacket,in cable tray;copper; 3 x 185 mm2			46.000	53.00	49.50	0.174
161 105-5350	15 KV wire armored Cable,Shielded & With PVC jacket,in cable tray;copper; 3 x 240 mm2			39.000	45.00	42.00	0.205
161 105-5400	15 KV wire armored Cable,Shielded & With PVC jacket,in cable tray;copper; 3 x 300 mm2			31.000	36.00	33.50	0.258
161 105-7200	15 KV wire armored Cable,Shielded & With PVC jacket,in cable tray;aluminium; 3 x 95 mm2			60.000	69.00	64.50	0.133
161 105-7500	15 KV wire armored Cable,Shielded & With PVC jacket,in cable tray;aluminium; 3 x 150 mm2			53.000	61.00	57.00	0.151
161 105-7700	15 KV wire armored Cable,Shielded & With PVC jacket,in cable tray;aluminium; 3 x 240 mm2			42.000	48.00	45.00	0.190
161 105-7750	15 KV wire armored Cable,Shielded & With PVC jacket,in cable tray;aluminium; 3 x 300 mm2			33.000	38.00	35.50	0.242
<b>161 135 CONTROL CABLE:</b>							
161 135-0200	1 KV control cable, 1.5 mm2. PVC jacket; 6 wires, installed in cable tray	LM	1 Electrician 1 Tools Set	300.000	345.00	322.50	0.027
161 135-0300	1 KV control cable, 1.5 mm2. PVC jacket; 10 wires, installed in cable tray			250.000	288.00	269.00	0.032
161 135-0600	1 KV control cable, 1.5 mm2. PVC jacket; 20 wires, installed in cable tray			160.000	184.00	172.00	0.050
161 135-0700	1 KV control cable, 1.5 mm2. PVC jacket; 10 wires, installed in conduit		0.125 Electrical Foreman 1.000 Special Electrician 1.000 Helper 1.000 Electrician Tools Set	120.000	138.00	129.00	0.067
161 135-0900	1 KV control cable, 1.5 mm2. PVC jacket; 20 wires, installed in conduit		0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Tools Set	75.000	86.00	80.50	0.107
<b>161 137 FIBER OPTICS:</b>							
161 137-0100	Fiber optic cable,labor depends on fiber type & type of connectors; Average labor	LM	0.125 Electrical Foreman 1.000 Special Electrician 1.000 Helper 1.000 Special Tools Set	250.000	288.00	269.00	0.032
161 137-0200	Fiber optic cable connector	EA	1 Electrician 1 Tools Set	20.000	23.00	21.50	0.400
161 137-0300	Fiber optic cable finger splice			25.000	29.00	27.00	0.320
161 137-0400	Multi-channel rack enclosure, ( 10 Modules )			1.500	2.00	1.75	5.333
161 137-0500	Fiber optic patch panel ( 12 points)			4.000	5.00	4.50	2.000
<b>161 140 MINERAL INSULATED CABLES:</b>							
161 140-0400	1 KV ; mineral insulated cable, installed in cable tray, copper; 1 x 16 mm2	LM	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Electrician Tools Set	100.000	115.00	107.50	0.080
161 140-0600	1 KV ; mineral insulated cable, installed in cable tray, copper; 1 x 50 mm2			70.000	81.00	75.50	0.114
161 140-0900	1 KV ; mineral insulated cable, installed in cable tray, copper; 1 x 150 mm2			50.000	58.00	54.00	0.160
161 140-1000	1 KV ; mineral insulated cable, installed in cable tray, copper; 1 x 240 mm2			40.000	46.00	43.00	0.200
<b>161 145 NON- ARMORED CABLE:</b>							
161 145-0120	1 KV cable, PVC insulated, PVC Sheath,installed in cable tray, copper; 4 x 16 mm2	LM	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Tools Set	170.000	196.00	183.00	0.047
161 145-0300	1 KV cable, PVC insulated, PVC Sheath,installed in cable tray, copper; 3 x 95 + 50 mm2			61.000	70.00	65.50	0.131
161 145-0380	1 KV cable, PVC insulated, PVC Sheath,installed in cable tray, copper; 3 x 150 + 70 mm2			66.000	76.00	71.00	0.121
161 145-0460	1 KV cable, PVC insulated, PVC Sheath,installed in cable tray, copper; 3 x 240 + 120 mm2			50.000	58.00	54.00	0.160
161 145-0500	1 KV cable, PVC insulated, PVC Sheath,installed in cable tray, copper; 3 x 300 + 150 mm2			40.000	46.00	43.00	0.200
161 145-0660	1 KV cable, PVC insulated, PVC Sheath,installed in cable tray, copper; 1 x 35 mm2			193.000	222.00	207.50	0.041



# **DIVISION 16: ELECTRICAL**

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161 145-0940	1 KV cable, PVC insulated, PVC Sheath, installed in cable tray, copper; 1 x 70 mm2			168.000	193.00	180.50	0.048
161 145-1100	1 KV cable, PVC insulated, PVC Sheath, installed in cable tray, copper; 1 x 185 mm2			140.000	161.00	150.50	0.057
161 145-1180	1 KV cable, PVC insulated, PVC Sheath, installed in cable tray, copper; 1 x 300 mm2			122.000	140.00	131.00	0.066
161 145-1700	1 KV cable, PVC insulated, PVC Sheath, installed in conduit, copper; 3 x 25 + 16 mm2, including 2 terminations every 30 m run, conduit length up to 30 meter, conduits not included			102.000	117.00	109.50	0.078
161 145-1860	1 KV cable, PVC insulated, PVC Sheath, installed in conduit, copper; 3 x 95 + 50 mm2, including 2 terminations every 30 m run, conduit length up to 30 meter, conduits not included			56.000	64.00	60.00	0.143
161 145-1940	1 KV cable, PVC insulated, PVC Sheath, installed in conduit, copper; 3 x 150 + 70 mm2			51.000	59.00	55.00	0.157
161 145-2220	1 KV cable, PVC insulated, PVC Sheath, installed in conduit, copper; 3 x 240 + 120 mm2			39.000	45.00	42.00	0.205
161 145-2260	1 KV cable, PVC insulated, PVC Sheath, installed in conduit, copper; 3 x 300 + 150 mm2, including 2 terminations, conduits not included			31.000	36.00	33.50	0.258
161 145-2680	1 KV cable, PVC insulated, PVC Sheath, installed in conduit, copper; 1 x 70 mm2, including 4 terminations per 100 meter	LM	0.250 Electrical Foreman 1.000 Electrician 3.000 Electrician Helper 1.000 Tools Set	131.000	151.00	141.00	0.061
161 145-2640	1 KV cable, PVC insulated, PVC Sheath, installed in conduit, copper; 1 x 185 mm2, including 2 terminations per 100 meter			109.000	125.00	117.00	0.073
161 145-2920	1 KV cable, PVC insulated, PVC Sheath, installed in conduit, copper; 1 x 300 mm2, including 2 terminations per 100 meter			95.000	109.00	102.00	0.084
161 145-3000	For cables pulled in more than 30 meter run, add for every extra meter						5.00%
<b>161 165 WIRES:</b>							
161 165-0060	0.6 To 1 KV, copper wire, THW or THHN, pulled in conduits, 4 mm2	LM	1 Electrician 2 Common Laborers 1 Tools Set	450.000	518.00	484.00	0.018
161 165-0100	0.6 To 1 KV, copper wire, THW or THHN, pulled in conduits, 6 mm2			360.000	414.00	387.00	0.022
161 165-0140	0.6 To 1 KV, copper wire, THW or THHN, pulled in conduits, 10 mm2			294.000	338.00	316.00	0.027
161 165-0180	0.6 To 1 KV, copper wire, THW or THHN, pulled in conduits, 16 mm2			204.000	235.00	219.50	0.039
161 165-0220	0.6 To 1 KV, copper wire, THW or THHN, pulled in conduits, 25 mm2			159.000	183.00	171.00	0.050
161 165-0380	0.6 To 1 KV, copper wire, THW or THHN, pulled in conduits, 95 mm2			90.000	104.00	97.00	0.089
161 165-0460	0.6 To 1 KV, copper wire, THW or THHN, pulled in conduits, 150 mm2			69.000	79.00	74.00	0.116
161 165-0540	0.6 To 1 KV, copper wire, THW or THHN, pulled in conduits, 240 mm2			60.000	69.00	64.50	0.133
161 165-0560	0.6 To 1 KV, copper wire, THW or THHN, pulled in conduits, 300 mm2			54.000	62.00	58.00	0.148
161 165-0740	0.6 To 1 KV, aluminium wire, THW or THHN, pulled in conduits, 6 mm2			432.000	497.00	464.50	0.019
161 165-0760	0.6 To 1 KV, aluminium wire, THW or THHN, pulled in conduits, 10 mm2			354.000	407.00	380.50	0.023
161 165-0840	0.6 To 1 KV, aluminium wire, THW or THHN, pulled in conduits, 25 mm2			195.000	224.00	209.50	0.041
161 165-1000	0.6 To 1 KV, aluminium wire, THW or THHN, pulled in conduits, 95 mm2			108.000	124.00	116.00	0.074
161 165-1160	0.6 To 1 KV, aluminium wire, THW or THHN, pulled in conduits, 240 mm2			72.000	83.00	77.50	0.111
161 165-1200	0.6 To 1 KV, aluminium wire, THW or THHN, pulled in conduits, 300 mm2			66.000	76.00	71.00	0.121
<b>161 500 TERMINATIONS</b>							
<b>161 520 CABLE TERMINATIONS:</b>							
161 520-0025	Wire connectors, screw type, 0.75 to 6 mm2	EA	1 Electrician	200.000	230.00	215.00	0.000
161 520-0035	Wire connectors, screw -on type, insulated, from 1 to 6 mm2			190.000	219.00	204.50	0.000
161 520-0040	Wire connectors, screw -on type, insulated, from 2 to 10 mm2			180.000	207.00	193.50	0.000
161 520-0045	Wire connectors, screw -on type, insulated, from 4 to 16 mm2			150.000	173.00	161.50	0.000
161 520-0100	Terminal lugs, solderless for wires, 6 to 25 mm2			40.000	46.00	43.00	0.000
161 520-0200	Terminal lugs, solderless for wires, 50 to 70 mm2			36.000	41.00	38.50	0.000
161 520-0325	Terminal lugs, solderless for wires, 150 mm2			20.000	23.00	21.50	0.000
161 520-0350	Terminal lugs, solderless for wires, 185 mm2			15.000	17.00	16.00	0.000
161 520-0375	Terminal lugs, solderless for wires, 240 mm2			10.000	12.00	11.00	0.000
161 520-0400	Terminal lugs, solderless for wires, 300 mm2			8.000	9.00	8.50	0.000
161 520-2000	Wire termination, 1 hole lug, crimp side, copper or aluminium, 25 mm2		1 Electrician 1 Crimping Tool	40.000	46.00	43.00	0.200
161 520-2400	Wire termination, 1 hole lug, crimp side, copper or aluminium, 50 mm2			36.000	41.00	38.50	0.222
161 520-3000	Wire termination, 1 hole lug, crimp side, copper or aluminium, 95 mm2			24.000	28.00	26.00	0.333
161 520-3400	Wire termination, 1 hole lug, crimp side, copper or aluminium, 150 mm2			20.000	23.00	21.50	0.400
161 520-3800	Wire termination, 1 hole lug, crimp side, copper or aluminium, 240 mm2			10.000	12.00	11.00	0.800
161 520-3900	Wire termination, 1 hole lug, crimp side, copper or aluminium, 300 mm2			8.000	9.00	8.50	1.000



# **DIVISION 16: ELECTRICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
<b>161 522</b>	<b>HIGH VOLTAGE CABLE TERMINATIONS:</b>						
161 522-0100	15 KV termination, cable 95 mm2 to indoor switchgear or transformer, premolded cone.	EA	0.125 Electrical Foreman 1.000 Electrical Joiner 1.000 Tools Set	6.000	7.00	6.50	1.333
161 522-0300	15 KV termination, cable 150 mm2 to indoor switchgear or transformer, premolded cone.			6.000	7.00	6.50	1.333
161 522-0500	15 KV termination, cable 185 mm2 to indoor switchgear or transformer, premolded cone.			6.000	7.00	6.50	1.333
161 522-0700	15 KV termination, cable 240 mm2 to indoor switchgear or transformer, premolded cone.			5.000	6.00	5.50	1.600
161 522-1000	15 KV termination, cable 300 mm2 to indoor switchgear or transformer, premolded cone.			5.000	6.00	5.50	1.600
<b>161 800</b>	<b>GROUNDING</b>						
<b>161 810</b>	<b>GROUNDING:</b>						
161 810-0030	Ground rod, copper clad, 2.4 m long, 20 mm diameter (3/4"), driven in standard soil.	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Common laborer 1.000 Power tool	10.000	12.00	11.00	0.800
161 810-0050	Ground rod, copper clad, 2.4 m long, 20 mm diameter (3/4"), driven in hard soil.			5.000	6.00	5.50	1.600
161 810-0100	Ground rod, copper clad, 3.0 m long, 20 mm diameter (3/4"), driven in hard soil.	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Common laborer 1.000 Power tool	4.000	5.00	4.50	2.000
161 810-0130	Ground rod, copper clad, 4.6 m long, 20 mm diameter (3/4"), driven in ordinary soil.			7.000	8.00	7.50	1.143
161 810-0200	Ground plate, copper 600x 600 mm, 1 meter deep, no excavation included			20.000	23.00	21.50	0.400
161 810-0600	Groundwire, bare copper, 35 mm2			500.000	575.00	537.50	0.016
161 810-0800	Groundwire, bare copper, 95 mm2			175.000	201.00	188.00	0.046
161 810-1000	Groundwire, bare copper, 150 mm2			150.000	173.00	161.50	0.053
161 810-1300	Groundwire, bare copper, 300 mm2			115.000	132.00	123.50	0.070
161 810-2100	Water pipe ground clamps, heavy duty bronze, 32 mm to 50 mm diameter			10.000	12.00	11.00	0.800
161 810-3100	Grounding, brazed connections, 35 mm2 cable			20.000	23.00	21.50	0.400
161 810-3100	Grounding, brazed connections, 95 mm2 cable			12.000	14.00	13.00	0.667
161 810-3200	Grounding, brazed connections, 150 mm2 cable			8.000	9.00	8.50	1.000
161 810-3700	Grounding, brazed connections, 300 mm2 cable			5.000	6.00	5.50	1.600
<b>162</b>	<b>BOXES &amp; WIRING DEVICES</b>						
<b>162 100</b>	<b>BOXES</b>						
<b>162 110</b>	<b>OUTLET BOXES</b>						
162 110-0020	Outlet Box, pressed steel, octagon or square, 100 mm	EA	1 Electrician	20.000	23.00	21.50	0.000
162 110-0100	Octagonal/square box extension cover, 100 mm			36.000	41.00	38.50	0.000
162 110-0250	Square outlet Box blank cover 100 mm			60.000	69.00	64.50	0.000
162 110-0300	Square outlet Box 100 mm, plaster ring cover raised			36.000	41.00	38.50	0.000
162 110-0650	Outlet Box, pressed steel, switch box "utility box" 100 mm x 50 mm			25.000	29.00	27.00	0.000
162 110-1100	Concrete floor, outlet box, 1 gang			6.000	7.00	6.50	0.000
<b>162 130</b>	<b>PULL BOXES &amp; CABINETS:</b>						
162 130-0200	Pull box, sheet metal, NEMA 1, 200 mm x 200 mm, 100 mm deep	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Power & Tools Set	11.000	13.00	12.00	0.727
162 130-0400	Pull box, sheet metal, NEMA 1, 400 mm x 500 mm, 200 mm deep			5.500	6.00	5.75	1.455
162 130-0600	Pull box, sheet metal, NEMA 1, 600 mm x 900 mm, 200 mm deep			3.500	4.00	3.75	2.286
162 130-0800	Hinged cabinet, sheet metal, NEMA 1 or NEMA 3R, 300 mm x 400 mm, 150 mm deep.			6.000	7.00	6.50	1.333
162 130-1200	Hinged cabinet, sheet metal, NEMA 1 or NEMA 3R, 500 mm x 500 mm, 200 mm deep.			4.250	5.00	4.63	1.882
162 130-1400	Hinged cabinet, sheet metal, NEMA 1 or NEMA 3R, 600 mm x 900 mm, 200 mm deep.			3.500	4.00	3.75	2.286
162 130-1600	Hinged cabinet, sheet metal, NEMA 1 or NEMA 3R, 600 mm x 1200 mm, 200 mm deep.			2.750	3.00	2.88	2.909
162 130-2200	Hinged cabinet, sheet metal, NEMA 1 or NEMA 3R, 800 mm x 600 mm, 300 mm deep.			2.500	3.00	2.75	3.200
162 130-2250	Hinged cabinet, sheet metal, NEMA 1 or NEMA 3R, 900 mm x 900 mm, 300 mm deep.			2.000	2.00	2.00	4.000
162 130-3050	Box/Cabinets, Cast Iron, surface mounted, NEMA 4, Weatherproof "WP" 150 x 150 mm, 150 mm deep.			5.500	6.00	5.75	1.455
162 130-3200	Box/Cabinets, Cast Iron, surface mounted, NEMA 4, Weatherproof "WP" 300 x 300 mm, 150 mm deep.			2.500	3.00	2.75	3.200
162 130-3350	Box/Cabinets, Cast Iron, surface mounted, NEMA 4, Weatherproof "WP" 600 x 450 mm, 200 mm deep.			1.000	1.00	1.00	8.000



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162 130-3400	Box/Cabinets,Cast Iron,surface mounted,NEMA 4,Weatherproof "WP" 600 x 600 mm, 250 mm deep			0.750	1.00	0.88	10.667
162 130-3450	Box/Cabinets,Cast Iron,surface mounted,NEMA 4,Weatherproof "WP" 760 x 600 mm, 300 mm deep			0.500	1.00	0.75	16.000
162 130-3500	Box/Cabinets,Cast Iron,surface mounted,NEMA 4,Weatherproof "WP" 900 x 900 mm, 300 mm deep			0.350	0.50	0.43	22.857
162 130-6400	Box/Cabinets,Cast Iron,surface mounted,NEMA 12,Dust&Drip tight, 300 x 400 mm, 150 mm deep			7.000	8.00	7.50	1.143
162 130-6400	Box/Cabinets,Cast Iron,surface mounted,NEMA 12,Dust&Drip tight, 600 x 900 mm, 200 mm deep			3.500	4.00	3.75	2.286
162 130-6450	Box/Cabinets,Cast Iron,surface mounted,NEMA 12,Dust&Drip tight, 600 x 1050 mm, 200 mm deep		0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Tools Set	3.500	4.00	3.75	2.286
162 130-6500	Box/Cabinets,Cast Iron,surface mounted,NEMA 12,Dust&Drip tight, 600 x 1200 mm, 200 mm deep			2.750	3.00	2.88	2.909
162 130-7050	Cabinets for current transformer,single door, 600 x 600 mm, 250 mm deep.			2.250	3.00	2.63	3.556
162 130-7150	Cabinets for current transformer,single door,900 x 600 mm, 250 mm deep.			1.500	2.00	1.75	5.333
162 130-7300	Cabinets for current transformer,single door,900 x 900 mm, 250 mm deep.			1.000	1.00	1.00	8.000
162 130-7500	Cabinets for current transformer,double door,1200 x 900 mm, 250 mm deep.			0.900	1.00	0.95	8.889
162 130-7550	Cabinets for current transformer,double door,600 x 600 mm, 300 mm deep.			1.500	2.00	1.75	5.333
<b>162 300</b>	<b>WIRING DEVICES</b>						
<b>162 310</b>	<b>LOW VOLTAGE SWITCHING:</b>						
162 310-3600	Relays, 120v or 220 V standard	EA	1 Electrician	10.000	12.00	11.00	0.000
162 310-3800	Switch,flush or surface; Standard or interchangeable.			36.000	41.00	38.50	0.000
162 310-4200	Low voltage switching,transformer 120 or 220V to 24V			10.000	12.00	11.00	0.000
162 310-4400	Low voltage switching,master control unit up to 25 circuits,manual or motorized.			3.000	3.00	3.00	0.000
162 310-4600	Low voltage switching,Silicon Rectifier.			10.000	12.00	11.00	0.000
162 310-5800	Switch plate, 3 gang, 9 switch,stainless steel			25.000	29.00	27.00	0.000
<b>162 320</b>	<b>WIRING DEVICES:</b>						
162 320-0200	Lighting switch,toggle,single pole,15A	EA	1 Electrician	32.000	37.00	34.50	0.000
162 320-0600	Lighting switch,toggle, 3 Way, 15A			20.000	23.00	21.50	0.000
162 320-0900	Lighting switch,toggle, 4 Way, 15A			13.000	15.00	14.00	0.000
162 320-1800	Dimmer switch, 120V, 1000 watt incandescent, 1 pole			20.000	23.00	21.50	0.000
162 320-2100	Dimmer switch, 120 V, 2000 watt incandescent, 1 pole			12.000	14.00	13.00	0.000
162 320-2470	Duplex receptacle, 120 or 220 V, grounded, 20 A			32.000	37.00	34.50	0.000
162 320-2475	Duplex receptacle, 120 or 220 V, grounded fault interrupting, "GFI", 20 A			24.000	28.00	26.00	0.000
162 320-2490	Receptacle,single, 250 V, grounded, 30A			20.000	23.00	21.50	0.000
162 320-2500	Receptacle,single, 250 V, grounded, 50A			16.000	18.00	17.00	0.000
162 320-4100	Single interlocking receptacle, ceiling mounted, 120 or 220 V, grounded, 15 A			18.000	21.00	19.50	0.000
162 320-4840	Receptacle, corrosion resistsnt, 20 A, 250 V			18.000	21.00	19.50	0.000
162 320-4900	Receptacle/ switch cover plate			80.000	92.00	86.00	0.000
162 320-5100	Plug straight or angle 20 A			30.000	35.00	32.50	0.000
162 320-5160	Plug straight or angle 30 A			28.000	32.00	30.00	0.000
162 320-5210	Plug straight or angle 50 A			20.000	23.00	21.50	0.000
162 320-7100	Connector computer, 3 pole, 4 wire, 20 A			32.000	37.00	34.50	0.000
162 320-7040	Connector computer, 3 pole, 4 wire, 60 A			16.000	18.00	17.00	0.000
162 320-7050	Connector computer, 3 pole, 4 wire,100 A			8.000	9.00	8.50	0.000
162 320-8000	Lampholder,keyless			20.000	23.00	21.50	0.000
162 320-8100	Lampholder,pullchain with receptacle			18.000	21.00	19.50	0.000
<b>163</b>	<b>MOTORS,STARTERS,BOARDS &amp; SWITCHES</b>						
<b>163 100</b>	<b>STARTERS &amp; CONTROLS</b>						
<b>163 110</b>	<b>MOTOR CONTROL CENTERS:</b>						
163 110-0100	Manufactured structure consisting combination of motor circuit protector &starter full voltage non-reversed "FVNR", with control transformer ; 10 HP size 1; of 300 mm	EA	1 Electrician 1 Tools Set	2.000	2.00	2.00	4.000
163 110-0200	Manufactured structure consisting combination of motor circuit protector &starter full voltage non-reversed "FVNR", with control transformer ; 25 HP size 1; of 457 mm height			1.750	2.00	1.88	4.571



**DIVISION 16: ELECTRICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVG.	AVRG. E. H.
163 110-0300	Manufactured structure consisting combination of motor circuit protector & starter full voltage non-reversed "FVNR", with control transformer ; 50 HP size 1; of 610 mm height			0.750	1.00	0.88	10.667
163 110-0350	Manufactured structure consisting combination of motor circuit protector & starter full voltage non-reversed "FVNR", with control transformer ; 75 HP size 1; of 610 mm height			0.650	1.00	0.83	12.308
163 110-0400	Manufactured structure consisting combination of motor circuit protector & starter full voltage non-reversed "FVNR", with control transformer ; 100 HP size 1; of 762 mm height			0.550	1.00	0.78	14.545
163 110-0500	Manufactured structure consisting combination of motor circuit protector & starter full voltage non-reversed "FVNR", with control transformer ; 200 HP size 1; of 1220 mm height			0.400	1.00	0.70	20.000
163 110-0600	Manufactured structure consisting combination of motor circuit protector & starter full voltage non-reversed "FVNR", with control transformer ; 400 HP size 1; of 1830 mm height			0.250	1.00	0.63	32.000
163 110-0900	MCC, 300 A, 22 KA IC, consisting number structure of starter units, combination of motor circuit protector & starter full voltage non-reversed "FVNR", with control transformer , push buttons & pilot lights; combination of units up to 1.83 m high		0.125 Electrical Foreman 1.000 Electrician 3.000 Helpers 0.250 Equip. Operator 0.250 Crane 11 Ton 1.000 Tools Set	0.380	1.00	0.69	26.316
<b>163 130</b>	<b>MOTOR STARTERS &amp; CONTROLS:</b>						
163 130-0100	Magnetic motor starters full voltage non-reversed "FVNR" with enclosure & heaters, 220V, Size 0 - "5 HP"	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Power Tools Set	3.250	4.00	3.63	2.462
163 130-0300	Magnetic motor starters full voltage non-reversed "FVNR" with enclosure & heaters, 220V, Size 2 - "25 HP"			1.500	2.00	1.75	5.333
163 130-0600	Magnetic motor starters full voltage non-reversed "FVNR" with enclosure & heaters, 220V, Size 5 - "200 HP"			0.650	1.00	0.83	12.308
163 130-0700	Magnetic motor starters full voltage non-reversed "FVNR" combination with motor circuit protector, including enclosure & heaters Size 0			2.400	3.00	2.70	3.333
163 130-1000	Magnetic motor starters full voltage non-reversed "FVNR" combination with motor circuit protector, including enclosure & heaters Size 3 - "50 HP"	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Power Tools Set	0.900	1.00	0.95	8.889
163 130-1200	Magnetic motor starters full voltage non-reversed "FVNR" combination with motor circuit protector, including enclosure & heaters Size 4 - "100 HP"			0.550	1.00	0.78	14.545
163 130-1600	Magnetic motor starters full voltage non-reversed "FVNR" combination with fused switch, including enclosure & heaters Size 1 - "10 HP"			1.750	2.00	1.88	4.571
163 130-1800	Magnetic motor starters full voltage non-reversed "FVNR" combination with fused switch, including enclosure & heaters Size 2			1.500	2.00	1.75	5.333
163 130-2200	Magnetic motor starters full voltage non-reversed "FVNR" combination with fused switch, including enclosure & heaters Size 4			0.550	1.00	0.78	14.545
<b>163 200</b>	<b>BOARDS</b>						
<b>163 205</b>	<b>CIRCUIT BREAKERS (in enclosure):</b>						
163 205-0400	Circuit Breakers in NEMA 1 enclosure; 600V, 3 pole, 100A	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Power Tools	3.500	4.00	3.75	2.286
163 205-0600	Circuit Breakers in NEMA 1 enclosure; 600V, 3 pole, 225A			2.250	3.00	2.63	3.556
163 205-0700	Circuit Breakers in NEMA 1 enclosure; 600V, 3 pole, 400A			1.500	2.00	1.75	5.333
163 205-1000	Circuit Breakers in NEMA 1 enclosure; 600V, 3 pole, 800A			0.750	1.00	0.88	10.667
<b>163 225</b>	<b>FUSE CABINETS:</b>						
163 225-0200	Fuse cabinets, 127/220 V, 3 wire, 4 branches 30A, including plug fuses.	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Power Tools	6.000	7.00	6.50	1.333
163 225-0500	Fuse cabinets, 127/220 V, 3 wire, 12 branches 30A, including plug fuses	"	"	3.000	3.00	3.00	2.667
<b>163 240</b>	<b>METER CENTERS:</b>						
163 240-2600	Meter board, fiberglass, rainproof, 3P, 4W, 127/227 V, consisting, Molded case C.B. & meter up to 200 A	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Power Tools	1.250	1.00	1.13	6.400
163 240-2610	Meter board, fiberglass, rainproof, 3P, 4W, 127/227 V, consisting, main lugs 300 A & 3 each molded case C.B. & meter up to 100 A			0.620	1.00	0.81	12.903
163 240-2630	Meter board, fiberglass, rainproof, 3P, 4W, 127/227 V, consisting, main lugs 600 A & 6 each molded case C.B. & meter			0.430	1.00	0.72	18.605
163 240-2660	Meter board, fiberglass, rainproof, 3P, 4W, 127/227 V, consisting, main lugs 1000 A & 10 each molded case C.B. & meter			0.280	0.50	0.39	28.571
163 240-3770	Meter board, fiberglass, rainproof, 3P, 4W, 127/227 V, consisting, main circuit breaker 600 A & 6 each molded case C.B. & meter			0.400	1.00	0.70	20.000
<b>163 245</b>	<b>PANELBOARDS (Commercial use)</b>						
163 245-0150	Panelboard 2 Phase 3 Wire, 100 Amps Main lugs only (M.L.O.); 127/220 V, including 10 branches, bolt-on type circuit breakers, 1P-20A	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Common Laborer 1.000 Power Tool	1.237	1.00	1.12	6.467



**DIVISION 16: ELECTRICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
163 245-0250	Panelboard 2 Phase 3 Wire, 100 Amps Main lugs only (M.L.O.); 127/220 V, including 18 branches, bolt-on type circuit breakers, 1P-20A			1.025	1.00	1.01	7.797
163 245-0350	Panelboard 2 Phase 3 Wire, 225 Amps Main lugs only (M.L.O.); 127/220 V, including 24 branches, bolt-on type circuit breakers, 1P-20A			0.706	1.00	0.85	11.331
163 245-0400	Panelboard 2 Phase 3 Wire, 225 Amps Main lugs only (M.L.O.); 127/220 V, including 30 branches, bolt-on type circuit breakers, 1P-20A			0.649	1.00	0.82	12.327
163 245-0550	Panelboard 2 Phase 3 Wire, 225 Amps Main lugs only (M.L.O.); 127/220 V, including 42 branches, bolt-on type circuit breakers, 1P-20A			0.558	1.00	0.78	14.337
163 245-0600	Panelboard 3 Phase 4 Wire, 100 Amps Main lugs only (M.L.O.); 127/220 V, including 12 branches, bolt-on type circuit breakers, 1P-20A			1.143	1.00	1.07	8.999
163 245-0700	Panelboard 3 Phase 4 Wire, 100 Amps Main lugs only (M.L.O.); 127/220 V, including 20 branches, bolt-on type circuit breakers, 1P-20A			0.960	1.00	0.98	8.333
163 245-0800	Panelboard 3 Phase 4 Wire, 100 Amps Main lugs only (M.L.O.); 127/220 V, including 30 branches, bolt-on type circuit breakers, 1P-20A			0.800	1.00	0.90	10.000
163 245-0950	Panelboard 3 Phase 4 Wire, 225 Amps Main lugs only (M.L.O.); 127/220 V, including 36 branches, bolt-on type circuit breakers, 1P-20A			0.571	1.00	0.79	14.011
163 245-1000	Panelboard 3 Phase 4 Wire, 225 Amps Main lugs only (M.L.O.); 127/220 V, including 42 branches, bolt-on type circuit breakers, 1P-20A			0.533	1.00	0.77	15.009
163 245-1300	Panelboard 3 Phase 4 Wire, 100 Amps Main lugs only (M.L.O.); 220/380 V, including 20 branches, bolt-on type circuit breakers, 1P-20A			0.984	1.00	0.99	8.130
163 245-1350	Panelboard 3 Phase 4 Wire, 225 Amps Main lugs only (M.L.O.); 220/380 V, including 24 branches, bolt-on type circuit breakers, 1P-20A			0.842	1.00	0.92	9.501
163 245-1400	Panelboard 3 Phase 4 Wire, 225 Amps Main lugs only (M.L.O.); 220/380 V, including 30 branches, bolt-on type circuit breakers, 1P-20A			0.747	1.00	0.87	10.710
163 245-1480	Panelboard 3 Phase 4 Wire, 225 Amps Main lugs only (M.L.O.); 220/380 V, including 42 branches, bolt-on type circuit breakers, 1P-20A			0.600	1.00	0.80	13.333
163 245-1750	Panelboard 2 Phase 3 Wire, 100 Amps Main Circuit Breaker; 127/220 V, including 20 branches, bolt-on type circuit breakers, 1P-20A			0.984	1.00	0.99	8.130
163 245-1800	Panelboard 2 Phase 3 Wire, 225 Amps Main Circuit Breaker; 127/220 V, including 30 branches, bolt-on type circuit breakers, 1P-20A			0.649	1.00	0.82	12.327
163 245-1850	Panelboard 2 Phase 3 Wire, 225 Amps Main Circuit Breaker; 127/220 V, including 42 branches, bolt-on type circuit breakers, 1P-20A			0.558	1.00	0.78	14.337
163 245-1900	Panelboard 2 Phase 3 Wire, 400 Amps Main Circuit Breaker; 127/220 V, including 30 branches, bolt-on type circuit breakers, 1P-20A			0.510	1.00	0.76	15.686
163 245-1950	Panelboard 2 Phase 3 Wire, 400 Amps Main Circuit Breaker; 127/220 V, including 42 branches, bolt-on type circuit breakers, 1P-20A	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Common Laborer 1.000 Power Tool	0.453	1.00	0.73	17.660
163 245-2000	Panelboard 3 Phase 4 Wire, 100 Amps Main Circuit Breaker; 127/220 V, including 24 branches, bolt-on type circuit breakers, 1P-20A			0.889	1.00	0.94	8.999
163 245-2100	Panelboard 3 Phase 4 Wire, 100 Amps Main Circuit Breaker; 127/220 V, including 30 branches, bolt-on type circuit breakers, 1P-20A			0.800	1.00	0.90	10.000
163 245-2250	Panelboard 3 Phase 4 Wire, 225 Amps Main Circuit Breaker; 127/220 V, including 42 branches, bolt-on type circuit breakers, 1P-20A			0.533	1.00	0.77	15.009
163 245-2300	Panelboard 3 Phase 4 Wire, 400 Amps Main Circuit Breaker; 127/220 V, including 42 branches, bolt-on type circuit breakers			0.419	1.00	0.71	19.093
163 245-2350	Panelboard 3 Phase 4 Wire, 600 Amps Main Circuit Breaker; 127/220 V, including 42 branches, bolt-on type circuit breakers			0.363	1.00	0.68	22.039
163 245-2500	Panelboard 3 Phase 4 Wire, 100 Amps Main Circuit Breaker; 220/380 V, including 24 branches, bolt-on type circuit breakers, 1P-20A			0.888	1.00	0.94	9.009
163 245-2550	Panelboard 3 Phase 4 Wire, 100 Amps Main Circuit Breaker; 220/380 V, including 30 branches, bolt-on type circuit breakers, 1P-20A			0.784	1.00	0.89	10.204
163 245-2650	Panelboard 3 Phase 4 Wire, 225 Amps Main Circuit Breaker; 220/380 V, including 42 branches, bolt-on type circuit breakers, 1P-20A			0.638	1.00	0.82	12.539
<b>163 250</b>	<b>PANELBOARD &amp; LOAD CENTER CIRCUIT BREAKERS:</b>						
163 250-0100	Install Circuit Breaker, bolt-on type, 10 000 Amp. Interrupting Capacity, 127V, 1 Pole, 15 to 50A, in panel	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Tools Set	15.000	17.00	16.00	0.533
163 250-0300	Install Circuit Breaker, bolt-on type, 10 000 Amp. Interrupting Capacity, 127V, 1 Pole, 70A, in panel			10.000	12.00	11.00	0.800
163 250-0400	Install Circuit Breaker, bolt-on type, 10 000 Amp. Interrupting Capacity, 220V, 2 Pole, 15 to 50A, in panel			6.700	8.00	7.35	1.194
163 250-0600	Install Circuit Breaker, bolt-on type, 10 000 Amp. Interrupting Capacity, 220V, 2 Pole, 100A, in panel			4.600	5.00	4.80	1.739
163 250-0700	Install Circuit Breaker, bolt-on type, 10 000 Amp. Interrupting Capacity, 220V, 3 Pole, 15 to 60A, in panel			5.200	6.00	5.60	1.538
163 250-0900	Install Circuit Breaker, bolt-on type, 10 000 Amp. Interrupting Capacity, 220V, 3 Pole, 100A, in panel			3.200	4.00	3.60	2.500
163 250-1000	Install Circuit Breaker, bolt-on type, 22 000 Amp. Interrupting Capacity, 220V, 2 Pole, 70 to 225A, in panel			2.900	3.00	2.95	2.759
163 250-1100	Install Circuit Breaker, bolt-on type, 22 000 Amp. Interrupting Capacity, 220V, 3 Pole, 70 to 225A, in panel			2.300	3.00	2.65	3.478
163 250-1200	Install Circuit Breaker, bolt-on type, 14 000 Amp. Interrupting Capacity, 220V, 1 Pole, 15 to 30A, in panel			15.000	17.00	16.00	0.533
163 250-1300	Install Circuit Breaker, bolt-on type, 22 000 Amp. Interrupting Capacity, 380V, 2 Pole, 70 to 225A, in panel			2.900	3.00	2.95	2.759
163 250-1400	Install Circuit Breaker, bolt-on type, 22 000 Amp. Interrupting Capacity, 380V, 3 Pole, 70 to 225A, in panel			2.300	3.00	2.65	3.478
<b>163 260</b>	<b>SWITCHBOARDS:</b>						



**DIVISION 16: ELECTRICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
163 260-2000	Switchboard incoming main service section,copper bus bars, including CT's with compartments and Main Air Circuit Breaker drawout Type;127/220 V, 3 Phase 4 Wire, 1000 Amp.	EA	0.125 Electrical Foreman 1.000 Electrician 2.000 Common Laborer 1.000 Hydraulic Jacks 1.000 Tools Set	0.750	1.00	0.88	21.333
163 260-2200	Switchboard incoming main service section,copper bus bars, including CT's with compartments and Main Air Circuit Breaker drawout Type;127/220 V, 3 Phase 4 Wire, 1600 Amp.			0.660	1.00	0.83	24.242
163 260-2300	Switchboard incoming main service section,copper bus bars, including CT's with compartments and Main Air Circuit Breaker drawout Type;127/220 V, 3 Phase 4 Wire, 2000 Amp.			0.600	1.00	0.80	26.667
163 260-2400	Switchboard incoming main service section,copper bus bars, including CT's with compartments and Main Air Circuit Breaker drawout Type;127/220 V, 3 Phase 4 Wire, 2500 Amp.			0.540	1.00	0.77	29.630
163 260-2500	Switchboard incoming main service section,copper bus bars, including CT's with compartments and Main Air Circuit Breaker drawout Type;127/220 V, 3 Phase 4 Wire, 3000 Amp.			0.480	1.00	0.74	33.333
163 260-2600	Switchboard incoming main service section,copper bus bars, including CT's with compartments and Main Air Circuit Breaker drawout Type;127/220 V, 3 Phase 4 Wire, 4000 Amp.			0.390	1.00	0.70	41.026
163 260-4600	Switchboard incoming main service section,copper bus bars, including CT's with compartments and Main Molded Case Circuit Breaker (MCCB), 127/220 V, 3 Phase 4 Wire, 600 Amp.			1.200	1.00	1.10	13.333
163 260-5000	Switchboard incoming main service section,copper bus bars, including CT's with compartments and Main Molded Case Circuit Breaker (MCCB), 127/220 V, 3 Phase 4 Wire, 1200 Amp.			0.750	1.00	0.88	21.333
163 260-5000	Switchboard incoming main service section,copper bus bars, including CT's with compartments and Main Molded Case Circuit Breaker (MCCB), 127/220 V, 3 Phase 4 Wire, 1600 Amp.			0.660	1.00	0.83	24.242
163 260-5000	Switchboard incoming main service section,copper bus bars, including CT's with compartments and Main Molded Case Circuit Breaker (MCCB), 127/220 V, 3 Phase 4 Wire, 2500 Amp.			0.540	1.00	0.77	29.630
<b>163 264</b>	<b>SWITCHBOARDS,DISTRIBUTION SECTION:</b>						
163 264-0200	Switchboard,distribution section,Copper bus bars,without breakers; 127/220 V or 220/380 V, 3 Phase, 4 Wire, 600 A.	EA	0.125 Electrical Foreman 1.000 Electrician 2.000 Common Laborer 1.000 Hydraulic Jacks 1.000 Tools Set	1.080	1.00	1.04	14.815
163 264-0600	Switchboard,distribution section,Copper bus bars,without breakers; 127/220 V or 220/380 V, 3 Phase, 4 Wire, 1600 A.	EA	0.125 Electrical Foreman 1.000 Electrician 2.000 Common Laborer 1.000 Hydraulic Jacks 1.000 Tools Set	0.594	1.00	0.80	26.936
163 264-0700	Switchboard,distribution section,aluminum bus bars,without breakers; 127/220 V or 220/380 V, 3 Phase, 4 Wire, 2000 A.			0.540	1.00	0.77	29.630
163 264-0900	Switchboard,distribution section,aluminum bus bars,without breakers; 127/220 V or 220/380 V, 3 Phase, 4 Wire, 2500 A.			0.486	1.00	0.74	32.922
163 264-0900	Switchboard,distribution section,aluminum bus bars,without breakers; 127/220 V or 220/380 V, 3 Phase, 4 Wire, 3000 A.			0.432	1.00	0.72	37.037
<b>163 266</b>	<b>SWITCHBOARDS,FEEDER SECTION:</b>						
163 266-0160	Switchboards,feeder section group mounted circuit breakers frame upto 60A, 1 pole	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Tools Set	15.000	17.00	16.00	0.533
163 266-0280	Switchboards,feeder section group mounted circuit breakers frame upto 100A, 1 pole			10.000	12.00	11.00	0.800
163 266-0420	Switchboards,feeder section group mounted circuit breakers frame 225 A, 3 pole			2.300	3.00	2.65	3.476
163 266-0430	Switchboards,feeder section group mounted circuit breakers frame 400 A, 3 pole			1.600	2.00	1.80	5.000
163 266-0460	Switchboards,feeder section group mounted circuit breakers frame 600 A, 3 pole			1.200	1.00	1.10	6.667
163 266-0490	Switchboards,feeder section group mounted circuit breakers frame 1200 A, 3 pole			0.800	1.00	0.90	10.000
163 266-0500	Switchboards,feeder section group mounted fused switch 30/30A, 2 pole			6.700	8.00	7.35	1.194
163 266-0600	Switchboards,feeder section group mounted fused switch 100/100A, 2 pole			4.600	5.00	4.80	1.739
<b>163 268</b>	<b>SWITCHBOARD INSTRUMENTS:</b>						
163 268-0100	Switchboard instruments 3 phase, 4 wire,AC indicating,ammeter or voltmeter & switch	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Tools Set	10.000	12.00	11.00	0.800
163 268-0300	Switchboard instruments 3 phase, 4 wire,AC indicating,wattmeter			10.000	12.00	11.00	0.800
163 268-0400	Switchboard instruments 3 phase, 4 wire,AC recording,ammeter or voltmeter			5.000	6.00	5.50	1.600
163 268-0600	Switchboard instruments 3 phase, 4 wire,ground fault protection.			3.250	4.00	3.63	2.462
163 268-0800	Switchboard instruments Current transformers, up to 2000 A high side			5.000	6.00	5.50	1.800
163 268-0850	Switchboard instruments Current transformers, up to 4000 A high side			4.000	5.00	4.50	2.000
163 268-1300	Switchboard instruments fused potential transformer, 600V			8.000	9.00	8.50	1.000
<b>163 300</b>	<b>SWITCHES</b>						
<b>163 310</b>	<b>CONTACTORS:</b>						



# **DIVISION 16: ELECTRICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
163 310-0200	Lighting contactor, electrically or mechanically held, 600 V, 3P - 30 A	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Power Tools	8.000	9.00	8.50	1.000
163 310-0400	Lighting contactor, electrically or mechanically held, 600 V, 3P - 100 A			5.500	6.00	5.75	1.455
163 310-0500	Lighting contactor, electrically or mechanically held, 600 V, 3P - 200 A			3.000	3.00	3.00	2.667
<b>163 320 CONTROL STATIONS:</b>							
163 320-0050	Control stations, NEMA 1, heavy duty, stop/start	EA	1 Electrician 1 Helper 1 Power Tools	12.000	14.00	13.00	0.667
163 320-0100	Control stations, NEMA 1, stop/start, pilot light			10.000	12.00	11.00	0.800
163 320-0200	Control stations, NEMA 1, hand/off/automatic			10.000	12.00	11.00	0.800
163 320-0400	Control stations, NEMA 1, stop/start/reverse			8.000	9.00	8.50	1.000
<b>163 350 RELAYS:</b>							
163 350-0050	Relay 600 V, 1P - 12A, NEMA - 1 enclosure	EA	1 Electrician 1 Helper 1 Power Tools	8.000	9.00	8.50	1.000
163 350-0100	Relay 600 V, 2P - 12A, NEMA - 1 enclosure			7.500	9.00	8.25	1.067
163 350-0200	Relay 600 V, 4P - 12A, NEMA - 1 enclosure			6.750	8.00	7.38	1.185
<b>163 360 SAFETY SWITCHES:</b>							
163 360-0200	Safety switch, general duty or heavy duty, 600 V, 3P - 60 A, fused.	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Power Tools	3.000	3.00	3.00	2.667
163 360-0300	Safety switch, general duty or heavy duty, 600 V, 3P - 100 A, fused.			2.750	3.00	2.88	2.909
163 360-0400	Safety switch, general duty or heavy duty, 600 V, 3P - 200 A, fused.			1.900	2.00	1.95	4.211
163 360-0500	Safety switch, general duty or heavy duty, 600 V, 3P - 400 A, fused.			1.250	1.00	1.13	6.400
163 360-0600	Safety switch, general duty or heavy duty, 600 V, 3P - 600 A, fused.			0.900	1.00	0.95	8.889
<b>163 500 MOTORS:</b>							
<b>163 520 MOTORS:</b>							
163 520-0100	Motors up to 480 V, 60 HZ Drip-proof, 1800 RPM, 1 HP, 220 V	EA	1 Electrician 1 Tools Set	7.000	8.00	7.50	1.143
163 520-0250	Motors up to 480 V, 60 HZ Drip-proof, 1800 RPM, 5 HP, 220 V			6.460	7.00	6.73	1.238
163 520-0350	Motors up to 480 V, 60 HZ Drip-proof, 1800 RPM, 10 HP, 220 V			5.450	6.00	5.73	1.468
163 520-0450	Motors up to 480 V, 60 HZ Drip-proof, 1800 RPM, 20 HP, 220 V	EA	1 Electrician 1 Tools Set	4.120	5.00	4.56	1.942
163 520-0650	Motors up to 480 V, 60 HZ Drip-proof, 1800 RPM, 50 HP, 220 V			2.730	3.00	2.87	2.930
163 520-0800	Motors up to 480 V, 60 HZ Drip-proof, 1800 RPM, 100 HP, 220 V			1.710	2.00	1.86	4.678
163 520-0950	Motors up to 480 V, 60 HZ Drip-proof, 1800 RPM, 200 HP, 220 V			0.860	1.00	0.93	9.302
163 520-3000	Motors up to 480 V, 60 HZ Drip-proof, 1800 RPM, 50 HP, 380 V			3.680	4.00	3.84	2.174
163 520-3600	Motors up to 480 V, 60 HZ Drip-proof, 1800 RPM, 100 HP, 380 V			2.230	3.00	2.62	3.587
163 520-3950	Motors up to 480 V, 60 HZ Drip-proof, 1800 RPM, 200 HP, 380 V			1.110	1.00	1.06	7.207
163 520-4800	Motors up to 480 V, 60 HZ Drip-proof, 1800 RPM, 200 HP, 480 V			1.200	1.00	1.10	6.667
<b>164 TRANSFORMERS &amp; BUS DUCTS</b>							
<b>164 100 TRANSFORMERS</b>							
<b>164 120 DRY TYPE TRANSFORMER:</b>							
164 120-0700	Dry type transformer, single phase, 440 or 240 V primary 220 or 120 V secondary, 5 kVA	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Tools Set	1.700	2.00	1.85	4.706
164 120-1100	Dry type transformer, single phase, 440 or 240 V primary 220 or 120 V secondary, 10 kVA			1.400	2.00	1.70	5.714
164 120-1500	Dry type transformer, single phase, 440 or 240 V primary 220 or 120 V secondary, 25 kVA		0.125 Electrical Foreman 2.000 Electricians 1.000 Helper 1.000 Tools Set	1.560	2.00	1.78	5.128
164 120-1900	Dry type transformer, single phase, 440 or 240 V primary 220 or 120 V secondary, 50 kVA			1.000	1.00	1.00	8.000
164 120-2100	Dry type transformer, single phase, 440 or 240 V primary 220 or 120 V secondary, 75 kVA			0.850	1.00	0.93	9.412
164 120-2200	Dry type transformer, single phase, 480V Primary 20/240 V secondary, non vent, 25 kVA			1.400	2.00	1.70	5.714
164 120-2310	Dry type transformer, 3 phase, 220/380 V primary, 127/220 V secondary, ventilated, 3 kVA		0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Tools Set	1.200	1.00	1.10	6.667

**DIVISION 16: ELECTRICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
164 120-3100	Dry type transformer, 3 phase, 220/380 V primary, 127/220 V secondary, ventilated, 15 kVA		0.125 Electrical Foreman 2.000 Electricians 1.000 Helper 1.000 Tools Set	1.450	2.00	1.73	5.479
164 120-3700	Dry type transformer, 3 phase, 220/380 V primary, 127/220 V secondary, ventilated, 75 kVA		0.250 Electrical Foreman 2.000 Electricians 1.000 Helper 0.250 Equipment Operator 0.125 Truck Crane 11 Ton 1.000 Tools Set	1.470	2.00	1.74	6.803
164 120-4100	Dry type transformer, 3 phase, 220/380 V primary, 127/220 V secondary, ventilated, 150 kVA			1.020	1.00	1.01	9.804
164 120-4500	Dry type transformer, 3 phase, 220/380 V primary, 127/220 V secondary, ventilated, 300 kVA			0.750	1.00	0.88	13.333
164 120-4700	Dry type transformer, 3 phase, 220/380 V primary, 127/220 V secondary, ventilated, 500 kVA			0.580	1.00	0.79	17.241
164 120-4800	Dry type transformer, 3 phase, 220/380 V primary, 127/220 V secondary, ventilated, 750 kVA			0.450	1.00	0.73	22.222
164 120-5000	Dry type transformer, 3 phase, 13800 V primary, 127/220 V or 220/380 V secondary, 100 kVA			0.930	1.00	0.97	18.280
164 120-5200	Dry type transformer, 3 phase, 13800 V primary, 127/220 V or 220/380 V secondary, 500 kVA			0.510	1.00	0.76	33.333
164 120-5300	Dry type transformer, 3 phase, 13800 V primary, 127/220 V or 220/380 V secondary, 750 kVA			0.400	1.00	0.70	42.500
164 120-5400	Dry type transformer, 3 phase, 13800 V primary, 127/220 V or 220/380 V secondary, 1000 kVA			0.370	1.00	0.69	45.946
164 120-5500	Dry type transformer, 3 phase, 13800 V primary, 127/220 V or 220/380 V secondary, 1500 kVA			0.310	1.00	0.66	54.839
164 120-5600	Dry type transformer, 3 phase, 13800 V primary, 127/220 V or 220/380 V secondary, 2000 kVA			0.270	0.50	0.39	62.963
164 120-5700	Dry type transformer, 3 phase, 13800 V primary, 127/220 V or 220/380 V secondary, 2500 kVA			0.230	0.50	0.37	73.913
164 120-7000	For dry type transformer installation in buildings floor, other than grade level add per floor	PERCENT		0.02	0.05	0.03	
<b>164 140</b>	<b>ISOLATING PANELS:</b>						
164 140-0100	Isolating panel in hospital critical care area or operating rooms, used with isolating transformer, 8 circuits 3 KVA	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Tools Set	0.900	1.00	0.95	8.889
164 140-0400	Isolating panel in hospital critical care area or operating rooms, used with isolating transformer, 8 circuits 7.5 KVA			0.850	1.00	0.93	9.412
164 140-0600	Isolating panel in hospital critical care area or operating rooms, used with isolating transformer, 8 circuits 10 KVA			0.800	1.00	0.90	10.000
164 140-0800	Isolating panel in hospital X- RAY systems, used with isolating transformer, 8 circuits 15 KVA			0.750	1.00	0.88	10.667
164 140-0100	Isolating panel in hospital X- RAY systems, used with isolating transformer, 8 circuits 25 KVA			0.700	1.00	0.85	11.429
<b>164 160</b>	<b>OIL OR SILICON FILLED TRANSFORMER:</b>						
164 160-0100	Oil filled transformer pad mounted, Primary: Delta or Star, 13.8 kV, With taps, 127/220 or 220/380 V Secondary 3 Phase, 150 KVA	EA	0.125 Electrical Foreman 2.000 Electricians 1.000 Helper 0.125 Equipment Operator 0.125 Truck Crane 11 Ton 2.000 Tools Set	0.700	1.00	0.85	24.286
164 160-0200	Oil filled transformer pad mounted, Primary: Delta or Star, 13.8 kV, With taps, 127/220 or 220/380 V Secondary 3 Phase, 300 KVA			0.520	1.00	0.76	32.692
164 160-0300	Oil filled transformer pad mounted, Primary: Delta or Star, 13.8 kV, With taps, 127/220 or 220/380 V Secondary 3 Phase, 500 KVA			0.490	1.00	0.75	34.694
164 160-0400	Oil filled transformer pad mounted, Primary: Delta or Star, 13.8 kV, With taps, 127/220 or 220/380 V Secondary 3 Phase, 750 KVA			0.380	1.00	0.69	44.737
164 160-0500	Oil filled transformer pad mounted, Primary: Delta or Star, 13.8 kV, With taps, 127/220 or 220/380 V Secondary 3 Phase, 1000 KVA			0.350	1.00	0.68	48.571
164 160-0600	Oil filled transformer pad mounted, Primary: Delta or Star, 13.8 kV, With taps, 127/220 or 220/380 V Secondary 3 Phase, 1500 KVA			0.300	0.75	0.53	56.667
164 160-0700	Oil filled transformer pad mounted, Primary: Delta or Star, 13.8 kV, With taps, 127/220 or 220/380 V Secondary 3 Phase, 2000 KVA			0.250	0.50	0.38	68.000
164 160-0800	Oil filled transformer pad mounted, Primary: Delta or Star, 13.8 kV, With taps, 127/220 or 220/380 V Secondary 3 Phase, 3750 KVA			0.190	0.50	0.35	89.474
<b>164 200</b>	<b>BUS DUCTS/BUSWAYS</b>						
<b>164 220</b>	<b>COPPER BUS DUCT:</b>						
164 220-1500	Copper bus duct plug-in, indoor, 3 pole 4 wire, straight section, 600 A	LM	0.125 Electrical Foreman 1.000 Special Electrician 1.000 Helper 0.125 Equip. Operator 0.125 Truck Crane 11 Ton 1.000 Tools Set	5.000	0.00	5.50	8.000
164 220-2450	Copper bus duct plug-in, indoor, 3 pole 4 wire, straight section, 1000 A			3.500	4.00	3.75	2.571
164 220-2500	Copper bus duct plug-in, indoor, 3 pole 4 wire, straight section, 1800 A			2.500	3.00	2.75	3.600



# **DIVISION 16: ELECTRICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
164 220-2510	Copper bus duct plug-in, indoor, 3 pole 4 wire, straight section, 2000 A.			1.950	2.00	1.98	4.615
164 220-2520	Copper bus duct plug-in, indoor, 3 pole 4 wire, straight section, 2500 A.			1.550	2.00	1.78	5.806
164 220-2550	Copper bus duct plug-in, indoor, 3 pole 4 wire, straight section, 3000 A.			1.200	1.00	1.10	7.500
164 220-2600	Copper bus duct plug-in, indoor, 3 pole 4 wire, straight section, 4000 A.			0.900	1.00	0.95	10.000
164 220-2800	Copper bus duct plug-in, outdoor "WP", including framed supports, 3 pole 4 wire feeder Section, 2000 A.			1.500	2.00	1.75	6.000
164 220-2900	Copper bus duct plug-in, outdoor "WP", including framed supports, 3 pole 4 wire feeder Section, 3000 A.			0.900	1.00	0.95	10.000
164 220-3000	Copper bus duct plug-in, outdoor "WP", including framed supports, 3 pole 4 wire feeder Section, 4000 A.			0.700	1.00	0.85	12.857
164 220-3300	Copper bus duct accessories: Elbow, 600 A			2.000	2.00	2.00	4.500
164 220-3600	Copper bus duct accessories: Elbow, 1600 A			1.500	2.00	1.75	6.000
164 220-3700	Copper bus duct accessories: Elbow, 2000 A			1.200	1.00	1.10	7.500
164 220-3800	Copper bus duct accessories: Elbow, 2500 A			1.000	1.00	1.00	9.000
164 220-3850	Copper bus duct accessories: Elbow, 3000 A			0.900	1.00	0.95	10.000
164 220-3900	Copper bus duct accessories: Elbow, 4000 A			0.800	1.00	0.90	11.250
164 220-4200	Copper bus duct accessories: End box, 600 A			20.000	23.00	21.50	0.450
164 220-4450	Copper bus duct accessories: End box, 1600 A			15.000	17.00	16.00	0.600
164 220-4500	Copper bus duct accessories: End box, 2000 A			13.000	15.00	14.00	0.692
164 220-4550	Copper bus duct accessories: End box, 2500 A			12.000	14.00	13.00	0.750
164 220-4600	Copper bus duct accessories: End box, 3000 A			10.000	12.00	11.00	0.900
164 220-4650	Copper bus duct accessories: End box, 4000 A			8.000	9.00	8.50	1.125
164 220-5100	Copper bus duct accessories: Cable tap box, 600 A			1.750	2.00	1.88	5.143
164 220-5400	Copper bus duct accessories: Cable tap box, 1600 A			1.000	1.00	1.00	9.000
164 220-5500	Copper bus duct accessories: Cable tap box, 2000 A			0.750	1.00	0.88	12.000
164 220-5600	Copper bus duct accessories: Cable tap box, 2500 A			0.500	1.00	0.75	16.000
164 220-6200	Copper bus duct accessories: Switchboard stub, 1600 A			2.000	2.00	2.00	4.500
164 220-6325	Copper bus duct accessories: Switchboard stub, 2500 A			1.500	2.00	1.75	6.000
164 220-6350	Copper bus duct accessories: Switchboard stub, 3000 A			1.250	1.00	1.13	7.200
164 220-6375	Copper bus duct accessories: Switchboard stub, 4000 A			1.000	1.00	1.00	9.000
164 220-6900	Copper bus duct accessories: Tee fitting, 1600 A			0.750	1.00	0.88	12.000
164 220-6950	Copper bus duct accessories: Tee fitting, 2000 A			0.550	1.00	0.78	16.364
164 220-7000	Copper bus duct accessories: Tee fitting, 2500 A			0.500	1.00	0.75	18.000
164 220-7400	Copper bus duct accessories: Plug-in Switch, 100 A			4.000	5.00	4.50	2.000
164 220-7600	Copper bus duct accessories: Plug-in Switch, 400 A	LM	0.125 Electrical Foreman 1.000 Special Electrician 1.000 Helper 1.000 Tools Set	1.250	1.00	1.13	6.400
164 220-8100	Copper bus duct accessories: Plug-in Molded Case Circuit Breaker (MCCB), 70 to 100 A			5.000	6.00	5.50	1.600
164 220-8200	Copper bus duct accessories: Plug-in Molded Case Circuit Breaker (MCCB), 150 to 225 A			3.000	3.00	3.00	2.667
164 220-8300	Copper bus duct accessories: Plug-in Molded Case Circuit Breaker (MCCB), 250 to 400 A			1.250	1.00	1.13	6.400
164 220-8400	Copper bus duct accessories: Plug-in Molded Case Circuit Breaker (MCCB), 500 to 600 A			0.850	1.00	0.93	9.412
164 220-8500	Copper bus duct accessories: Plug-in Molded Case Circuit Breaker (MCCB), 700 to 800 A			0.750	1.00	0.88	10.667
164 220-8600	Copper bus duct accessories: Plug-in Molded Case Circuit Breaker (MCCB), 900 to 1000 A			0.600	1.00	0.80	13.333
164 220-8700	Copper bus duct accessories: Plug-in Molded Case Circuit Breaker (MCCB), 1200 A			0.450	1.00	0.73	17.778
<b>165</b>	<b>POWER SYSTEMS &amp; CAPACITORS</b>						
<b>165 100</b>	<b>POWER SYSTEMS</b>						
<b>165 120</b>	<b>GENERATOR SET: COMPLETE WITH ELECTROMECH CONNECTIONS UP TO 20 METERS DISTANCE</b>						
165 120-0400	Generator set, gas or gasoline operated, includes battery, charger, muffler & transfer switch 3 phase, 4 wire, up to 220/380 V; 15 KW	EA	1.000 Skilled Foreman 3.000 Skilled Workers 0.250 Equip. Operator 2.000 Common Laborer 0.250 Crane 11 Ton 2.000 Power Tools, Hydraulic 1.000 Tools Set	0.900	1.00	0.95	26.889



# **DIVISION 16: ELECTRICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
165 120-0600	Generator set,gas or gasoline operated,includes battery,charger,muffler & transfer switch 3 phase, 4 wire, up to 220/380 V; 70 KW			0.625	1.00	0.81	41.600
165 120-0800	Generator set,gas or gasoline operated,includes battery,charger,muffler & transfer switch 3 phase, 4 wire, up to 220/380 V; 115 KW			0.450	1.00	0.73	57.778
165 120-2300	Generator set,diesel engine,including battery,charger,muffler,transfer switch & daily fuel tank, 3 Phase, 4 Wire Up to 220/380 V; Capacity 100 KW			0.300	0.50	0.40	86.667
165 120-2500	Generator set,diesel engine,including battery,charger,muffler,transfer switch & daily fuel tank, 3 Phase, 4 Wire Up to 220/380 V; Capacity 150 KW			0.275	0.50	0.39	94.545
165 120-2600	Generator set,diesel engine,including battery,charger,muffler,transfer switch & daily fuel tank, 3 Phase, 4 Wire Up to 220/380 V; Capacity 200 KW			0.250	0.50	0.38	104.000
165 120-2700	Generator set,diesel engine,including battery,charger,muffler,transfer switch & daily fuel tank, 3 Phase, 4 Wire Up to 220/380 V; Capacity 300 KW			0.225	0.50	0.36	115.556
165 120-2800	Generator set,diesel engine,including battery,charger,muffler,transfer switch & daily fuel tank, 3 Phase, 4 Wire Up to 220/380 V; Capacity 400 KW			0.200	0.50	0.35	130.000
165 120-3000	Generator set,diesel engine,including battery,charger,muffler,transfer switch & daily fuel tank, 3 Phase, 4 Wire Up to 220/380 V; Capacity 600 KW			0.180	0.50	0.34	144.444
165 120-3100	Generator set,diesel engine,including battery,charger,muffler,transfer switch & daily fuel tank, 3 Phase, 4 Wire Up to 220/380 V; Capacity 900 KW			0.125	0.50	0.31	208.000
165 120-3200	Generator set,diesel engine,including battery,charger,muffler,transfer switch & daily fuel tank, 3 Phase, 4 Wire Up to 220/380 V; Capacity 1200 KW			0.100	0.50	0.30	260.000
<b>165 125</b>	<b>TRANSFER SWITCHES:</b>						
165 125-0300	Automatic transfer switch in NEMA 1 enclosure, 600 A	EA	0.125 Electrical Foreman 1.000 Special Electrician 1.000 Helper 1.000 Tools Set	0.900	1.00	0.95	8.889
165 125-0400	Automatic transfer switch in NEMA 1 enclosure, 1000 A			0.750	1.00	0.88	10.667
165 125-0500	Automatic transfer switch in NEMA 1 enclosure, 1200 A			0.700	1.00	0.85	11.429
165 125-0600	Automatic transfer switch in NEMA 1 enclosure, 1600 A			0.600	1.00	0.80	13.333
165 125-0700	Automatic transfer switch in NEMA 1 enclosure, 2000 A			0.500	1.00	0.75	16.000
165 125-1100	Manual transfer switch in NEMA 1 enclosure, 200 A			1.750	2.00	1.88	4.571
165 125-1200	Manual transfer switch in NEMA 1 enclosure, 400 A			1.250	1.00	1.13	6.400
165 125-1300	Manual transfer switch in NEMA 1 enclosure, 600 A			1.000	1.00	1.00	8.000
<b>165 200</b>	<b>CAPACITORS</b>						
<b>165 210</b>	<b>CAPACITORS:</b>						
165 210-0150	Capacitor indoor, 220V,single Phase & 3 phase, 2.5 KVAR	EA	0.125 Electrical Foreman 1.000 Special Electrician 1.000 Helper 1.000 Tools Set	3.500	4.00	3.75	2.286
165 210-0200	Capacitor indoor, 220V,single Phase & 3 phase, 5.0 KVAR			2.500	3.00	2.75	3.200
165 210-0300	Capacitor indoor, 220V,single Phase & 3 phase, 10 KVAR			2.000	2.00	2.00	4.000
165 210-1000	Capacitor indoor, 220V,single Phase & 3 phase, 25 KVAR			1.500	2.00	1.75	5.333
165 210-1150	Capacitor indoor, 380V,single Phase & 3 phase, 5 KVAR			3.000	3.00	3.00	2.667
165 210-1250	Capacitor indoor, 380V,single Phase & 3 phase, 15 KVAR			2.750	3.00	2.88	2.909
165 210-1350	Capacitor indoor, 380V,single Phase & 3 phase, 30 KVAR			2.000	2.00	2.00	4.000
165 210-1450	Capacitor indoor, 380V,single Phase & 3 phase, 50 KVAR			1.750	2.00	1.88	4.571
<b>166</b>	<b>LIGHTING</b>						
<b>166 100</b>	<b>LIGHTING</b>						
<b>166 110</b>	<b>EXIT AND EMERGENCY LIGHTING:</b>						
166 110-0080	Exit lighting fixture, ceiling or wall mount, incandescent,single face.	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Tools Set	14.000	16.00	15.00	0.571
166 110-0100	Exit lighting fixture, ceiling or wall mount, incandescent,double face.			11.000	13.00	12.00	0.727
166 110-0300	Emergency lighting fixture,battery operated,twin sealed beam lights, 25W, 6V each.			8.000	9.00	8.50	1.000
166 110-0900	Emergency lighting fixture, self-contained fluorescent lamp pack			15.000	17.00	16.00	0.533
<b>166 115</b>	<b>EXTERIOR FIXTURES:</b>						
166 115-0200	Exterior lighting fixture with lamp wall mounted,incandescent, 100 W	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Tools Set	25.000	29.00	27.00	0.320
166 115-0400	Exterior lighting fixture with lamp, floodlight,quartz, 500 W, wall mounted			20.000	23.00	21.50	0.400
166 115-0600	Exterior lighting fixture with lamp,floodlight,mercury vapor, 100 W, wall mounted			10.000	12.00	11.00	0.833
166 115-0800	Exterior lighting fixture,wall pack,discharge lamp up to 250 Watt			10.000	12.00	11.00	0.909
166 115-1000	Exterior fixture,floodlights with ballast and lamp,pole mounted,pole not included Mercury Vapor,metal halide or sodium, 175 W			6.000	7.00	6.50	1.333
166 115-1400	Exterior fixture,floodlights with ballast and lamp,pole mounted,pole not included Mercury Vapor,metal halide or sodium, 250 W			6.000	7.00	6.50	1.333



**DIVISION 16: ELECTRICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
166 115-1600	Exterior fixture, floodlights with ballast and lamp, pole mounted, pole not included Mercury Vapor, metal halide or sodium, 400 W			5.000	6.00	5.50	1.600
166 115-1800	Exterior fixture, floodlights with ballast and lamp, pole mounted, pole not included Mercury Vapor, metal halide or sodium, 1000 W			8.000	9.00	8.50	1.000
166 115-2840	Exterior Light Pole, Aluminium, anchor base without concrete, 2.5 meter high			7.000	8.00	7.50	1.143
166 115-3000	Exterior Light Pole, Aluminium, anchor base without concrete, 6.0 meter high		0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Equip. Operator 1.000 Truck Crane 11 Ton 1.000 Tools Set	6.000	7.00	6.50	2.667
166 115-3200	Exterior Light Pole, Aluminium, anchor base without concrete, 9.0 meter high			4.500	5.00	4.75	3.556
166 115-3600	Exterior Light Pole, Aluminium, anchor base without concrete, 12 meter high			3.500	4.00	3.75	4.571
166 115-3800	Exterior Light pole bracket arms, 1 arm, Steel or Aluminium			10.000	12.00	11.00	1.600
166 115-4000	Exterior Light pole bracket arms, 2 arms, Steel or aluminium			9.000	10.00	9.50	1.778
166 115-4400	Exterior Light pole bracket arms, 4 arms, Steel or Aluminium			7.000	8.00	7.50	2.286
166 115-4500	Exterior Light Pole, Steel, anchor base without concrete, 2.5 meter high		0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Tools Set	6.000	7.00	6.50	1.333
166 115-4600	Exterior Light Pole, Steel, anchor base without concrete, 6.0 meter high		0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Equip. Operator 1.000 Truck Crane 11 Ton 1.000 Tools Set	5.000	6.00	5.50	3.200
166 115-4800	Exterior Light Pole, Steel, anchor base without concrete, 9.0 meter high			4.000	5.00	4.50	4.000
166 115-5200	Exterior Light Pole, Steel, anchor base without concrete, 12 meter high			3.000	3.00	3.00	5.333
166 115-6100	Exterior Light Pole, Fiberglass, anchor base without concrete, 6.0 meter high			8.000	9.00	8.50	2.000
166 115-6200	Exterior Light Pole, Fiberglass, anchor base without concrete, 9.0 meter high			7.000	8.00	7.50	2.286
166 115-6500	Exterior, Bollard light, including mercury fixture 175 watt, lamp, ballast & polycarbonate lens, 1.00 m high		0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Tools Set	6.000	7.00	6.50	1.333
166 115-7100	Exterior, Bollard light, including sodium fixture up to 150 watt, lamp, ballast & polycarbonate lens, 1.00 m high			6.000	7.00	6.50	1.333
166 115-7400	Exterior Landscape recessed uplight, including housing, ballast, transformer & reflector, mercury 100 watt			9.000	10.00	9.50	0.889
166 115-7400	Exterior Landscape recessed uplight, including housing, ballast, transformer & reflector, incandescent 100 watt			10.000	12.00	11.00	0.800
166 115-7440	Exterior Landscape recessed uplight, including housing, ballast, transformer & reflector, Quartz 250 watt			9.000	10.00	9.50	0.889
166 115-7460	Exterior Landscape recessed uplight, including housing, ballast, transformer & reflector, Quartz 500 watt			8.000	9.00	8.50	1.000
<b>166 130 INTERIOR LIGHTING FIXTURES (ILF)</b>							
166 130-0200	Interior fluorescent fixture recessed mounted, with lens 300 x 1200 mm, 2 x 40 watt	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Tools Set	9.000	10.00	9.50	0.889
166 130-0400	Interior fluorescent fixture recessed mounted, with lens 600 x 1200 mm, 2 x 40 watt			8.000	9.00	8.50	1.000
166 130-0600	Interior fluorescent fixture recessed mounted, with lens 600 x 1200 mm, 4 x 40 watt			7.000	8.00	7.50	1.143
166 130-0660	Interior fluorescent fixture recessed mounted, with lens 600 x 600 mm, 4 x 20 watt			9.000	10.00	9.50	0.889
166 130-0900	Interior fluorescent fixture recessed mounted, with lens 1200 x 1200 mm, 8 x 40 watt			4.500	5.00	4.75	1.778
166 130-1100	Interior fluorescent fixture surface mounted, with lens & latched door frame, 300 x 1200 mm, 2 x 40 W	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Tools Set	11.000	13.00	12.00	0.727
166 130-1110	Interior fluorescent fixture surface mounted, with lens & latched door frame, 300 x 1200 mm, 3 x 40 W			10.000	12.00	11.00	0.800
166 130-1500	Interior fluorescent fixture surface mounted, with lens & latched door frame, 600 x 1200 mm, 4 x 40 W			8.000	9.00	8.50	1.000
166 130-1560	Interior fluorescent fixture surface mounted, with lens & latched door frame, 600 x 600 mm, 4 x 20 W			10.000	12.00	11.00	0.800
166 130-1600	Interior fluorescent fixture surface mounted, with lens & latched door frame, 1200 x 1200 mm, 4 x 40 W			6.000	7.00	6.50	1.333
166 130-1700	Interior fluorescent fixture surface mounted, with lens & latched door frame, 1200 x 1200 mm, 6 x 40 W			5.600	6.00	5.80	1.429
166 130-1800	Interior fluorescent fixture surface mounted, with lens & latched door frame, 1200 x 1200 mm, 8 x 40 W			4.800	6.00	5.40	1.667
166 130-1900	Interior fluorescent fixture surface mounted, with lens & latched door frame, 600 x 2400 mm, 4 x 40 W			5.600	6.00	5.80	1.429
166 130-2000	Interior fluorescent fixture surface mounted, with lens & latched door frame, 600 x 2400 mm, 8 x 40 W			4.800	6.00	5.40	1.667
166 130-2100	Interior Strip fluorescent fixture, surface mounted, 1200 mm long, 1 x 40 Watt, rapid start			14.000	16.00	15.00	0.571



# **DIVISION 16: ELECTRICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
166 130-2200	Interior Strip fluorescent fixture,surface mounted, 1200 mm long, 2 x 40 Watt, rapid start.			13.000	15.00	14.00	0.615
166 130-2300	Interior Strip fluorescent fixture,surface mounted, 1200 mm long, 2 x 40 Watt, slimline.			13.000	15.00	14.00	0.615
166 130-2700	Interior Strip fluorescent fixture,surface mounted, 2400 mm long, 2 x 75 Watt, slimline.			11.000	13.00	12.00	0.727
166 130-2800	Interior Strip fluorescent fixture,surface mounted, 1200 mm long, 2 x 60 Watt, rapid start.			11.700	13.00	12.35	0.684
166 130-3100	Interior pendant fluorescent fixture,industrial with white porcelain enamel open reflector, 1200 mm long, 2 x 40 Watt rapid start.			9.000	10.00	9.50	0.889
166 130-3200	Interior pendant fluorescent fixture,industrial with white porcelain enamel open reflector, 1200 mm long, 2 x 60 Watt rapid start.			8.000	9.00	8.50	1.000
166 130-3250	Interior pendant fluorescent fixture,industrial with white porcelain enamel open reflector, 2400 mm long, 2 x 75 Watt slimline.			7.000	8.00	7.50	1.143
166 130-3300	Interior pendant fluorescent fixture,industrial with white porcelain enamel open reflector, 2400 mm long, 2 x 110 Watt.			6.000	7.00	6.50	1.333
166 130-3470	Interior fluorescent fixture troffer,air handling type, 600 x 1200 mm, 4 x 40 Watt rapid start, complete with 150 mm diameter air connector.			6.000	7.00	6.50	1.333
166 130-3480	Interior fluorescent fixture troffer,air handling type, 600 x 600 mm, 4 x 20 Watt rapid start, complete with 150 mm diameter air connector.			8.000	9.00	8.50	1.000
166 130-3700	Interior Mercury Vapor lighting fixture,integral ballast,ceiling recess mounted, prismatic glass lens,floating door, 600 x 600 mm, 250 W Deluxe white lamp.			5.000	6.00	5.50	1.600
166 130-3800	Interior Mercury Vapor lighting fixture,integral ballast,ceiling recess mounted, prismatic glass lens,floating door, 600 x 600 mm, 400 W Deluxe white lamp.			4.500	5.00	4.75	1.778
166 130-3900	Interior Mercury Vapor lighting fixture,integral ballast,ceiling, surface mounted, prismatic glass lens,floating door, 600 x 600 mm, 400 W Deluxe white lamp.			4.000	5.00	4.50	2.000
166 130-4000	Interior Mercury Vapor fixture,High bay,Aluminium reflector,integral ballast, 400 W Deluxe white lamp.			3.750	4.00	3.88	2.133
166 130-4100	Interior Mercury Vapor fixture,High bay,Aluminium reflector,integral ballast, 1000 W Deluxe white lamp.			3.000	3.00	3.00	2.667
166 130-4200	Interior Mercury Vapor fixture,High bay,Aluminium reflector,integral ballast, Twin unit, 400 W Deluxe white lamp.			2.500	3.00	2.75	3.200
166 130-4480	Indoor incandescent fixture, high hat can,round alzak reflector up to 150 W			13.000	15.00	14.00	0.615
166 130-4500	Indoor incandescent fixture, high hat can,round alzak reflector 300 W			11.000	13.00	12.00	0.727
166 130-4700	Indoor incandescent fixture, square glass lens with metal trim, up to 200 W			11.000	13.00	12.00	0.727
166 130-4800	Indoor incandescent fixture, square glass lens with metal trim, 300 W			10.000	12.00	11.00	0.800
166 130-4920	Indoor incandescent fixture, ceiling /wall mounted,metal cylinder, up to 150 W			16.000	18.00	17.00	0.500
166 130-5200	Indoor incandescent fixture, ceiling,surface mounted,opal glass drum, 200 mm, 1 x 60 watt lamp.			16.000	18.00	17.00	0.500
166 130-5400	Indoor incandescent fixture, ceiling,surface mounted,opal glass drum, 250 mm, 2 x 60 watt lamp.			13.000	15.00	14.00	0.615
166 130-5500	Indoor incandescent fixture, ceiling,surface mounted,opal glass drum, 300 mm, 4 x 60 watt lamp.			11.000	13.00	12.00	0.727
166 130-6010	Indoor incandescent fixture, vapor tight, ceiling mounted, 200 Watt.			12.000	14.00	13.00	0.667
166 130-6100	Indoor,Vapor tight fluorescent fixture,surface mounted, 1200 mm long,rapid start, 2 x 40 Watt.			5.000	6.00	5.50	1.600
166 130-6200	Indoor,Vapor tight Mercury Vapor fixture,integral ballast,surface mounted, 175 Watt.			6.000	7.00	6.50	1.333
166 130-6300	Indoor,Explosionproof incandescent fixture, ceiling mounted, 200W			6.000	7.00	6.50	1.333
166 130-6600	Indoor,explosionproof fluorescent fixture,1200 mm long,ceiling mounted, 2 x 40 Watt,rapid start.			4.000	5.00	4.50	2.000
166 130-6700	Indoor,Explosionproof,Mercury vapor with ballast,surface mounted, 175W			5.000	6.00	5.50	1.600
166 130-6850	Indoor,Vandalproof fluorescent fixture,surface mounted, 2 x 40 Watt.			5.000	6.00	5.50	1.600
166 130-6860	Indoor,Vandalproof incandescent fixture,surface mounted, 1 x 150 Watt.			13.000	15.00	14.00	0.615
166 130-7500	Lighting fixture,Ballast replacement, up to 4.2 m high,up to 0.9 kg ballast weight.			20.000	23.00	21.50	0.400
166 130-7540	Lighting fixture,Ballast replacement, up to 4.2 m high,from 0.9 to 2.3 kg ballast weight.	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Tools Set	18.000	21.00	19.50	0.444
166 130-7580	Lighting fixture,Ballast replacement, up to 4.2 m high,above 2.3 kg ballast weight.			16.000	18.00	17.00	0.500
166 130-7640	Lighting fixture,Electronic or Dimmable Ballast replacement, up to 4.2 m high,for 2 Lamp.			16.000	18.00	17.00	0.500
166 130-7650	For Indoor Lighting fixture & Ballast s Installation in more than 1 floor building, add per additional floor to above items						0.000
166 130-8250	Indoor incandescent Chandelier up to 0.70 m diameter & 1.0 m high, crystal & brass			3.000	3.00	3.00	2.667
166 130-8250	Indoor incandescent Chandelier up to 1.25 m diameter & 1.5 m high, crystal & brass			1.000	1.00	1.00	8.000
166 130-8250	Indoor incandescent Chandelier up to 1.50 m diameter & 2.0 m high, crystal & brass			0.250	0.50	0.38	32.000
<b>166 150 TRACK LIGHTING:</b>							
166 150-0080	Track lighting, 1 circuit	LM	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Tools Set	12.000	14.00	13.00	0.667



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CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
166 150-0300	Track lighting, 3 circuit			10.000	12.00	11.00	0.800
166 150-1000	Feed kit, surface mounting	EA		28.000	32.00	30.00	0.286
166 150-1100	End cover			40.000	46.00	43.00	0.200
166 150-1300	Feed kit, stem mounting, 3 circuit track			28.000	32.00	30.00	0.286
166 150-2000	Electrical jointer, for continuous runs, 1 circuit track			55.000	63.00	59.00	0.145
166 150-2100	Electrical jointer, for continuous runs, 3 circuit track			55.000	63.00	59.00	0.145
166 150-3000	Lighting fixture spotlight			28.000	32.00	30.00	0.286
<b>167 ELECTRIC UTILITIES</b>							
<b>167 100 ELECTRIC UTILITIES</b>							
<b>167 110 ELECTRIC &amp; TELEPHONE SITE WORK:</b>							
167 110-1000	Handholes, precast concrete with concrete cover, not including excavation & backfill, 1.2 x 1.2 meters, 1.2 meter deep	EA	0.125 Foreman 1.000 Skilled Laborer 2.000 Helper 0.250 Equipment Operator 0.250 Truck Crane 11 Ton	3.500	4.00	3.75	0.571
167 110-1400	Manhole, precast concrete with iron racks, pulling irons, cast iron frame & cover, not including excavation & backfill, 1.2 x 1.8 meters, 2.1 meter deep			2.000	2.00	2.00	1.000
167 110-2000	Poles, wood, creosoted, 6.0 meters high, not including excavation, backfill & concrete base			4.000	5.00	4.50	0.500
167 110-2600	Poles, wood, creosoted, 9.0 meters high, not including excavation, backfill & concrete base			3.000	3.00	3.00	0.667
167 110-3000	Poles, wood, creosoted, 12 meters high, not including excavation, backfill & concrete base			2.000	2.00	2.00	1.000
167 110-3600	Cross arms for wooden pole, with hardware & insulators, 1.2 meter long			6.000	7.00	6.50	0.333
167 110-4000	Cross arms for wooden pole, with hardware & insulators, 2 meter long			5.000	6.00	5.50	0.400
167 110-4600	Underground duct bank, PVC type, concrete encased, 180 mm O.C.; 2 duct 50 mm diameter	LM	0.125 Foreman 3.000 Electricians 2.000 Common Laborers 0.250 Light Equip. Oper. 0.125 concrete mixer 0.125 Wheeled Engine Cart 1 Heat Bender 0.250 Backhoe	29.100	33.00	31.05	0.412
167 110-4800	Underground duct bank, PVC type, concrete encased, 180 mm O.C.; 4 duct 50 mm diameter, complete including handling, excavation, fill, concrete & conduit laying			21.560	25.00	23.28	0.557
167 110-5600	Underground duct bank, PVC type, concrete encased, 180 mm O.C.; 4 duct 100 mm diameter, complete including handling, excavation, fill, concrete & conduit laying			19.160	22.00	20.58	0.626
167 110-6000	Underground duct bank, PVC type, concrete encased, 250 mm O.C.; 4 duct 150 mm diameter, complete including handling, excavation, fill, concrete & conduit laying			14.360	17.00	15.68	0.836
167 110-6200	Underground duct bank, Rigid galvanized steel type, no concrete or excavation, 180 mm O.C.; 2 duct 50 mm diameter		0.125 Electrician Foreman 1.000 Electrician 1.000 Helper 1 Tools Set	24.190	28.00	26.10	0.331
167 110-6400	Underground duct bank, Rigid galvanized steel type, no concrete or excavation, 180 mm O.C.; 4 duct 50 mm diameter			12.460	14.00	13.23	0.642
167 110-7200	Underground duct bank, Rigid galvanized steel type, no concrete or excavation, 180 mm O.C.; 2 duct 100 mm diameter			11.170	13.00	12.09	0.716
167 110-7640	Underground duct bank, Rigid galvanized steel type, no concrete or excavation, 250 mm O.C.; 4 duct 150 mm diameter			4.470	5.00	4.74	1.790
167 110-8040	PVC duct bank fittings: Elbow, 100 mm diameter			18.000	21.00	19.50	0.444
167 110-8080	PVC duct bank fittings: Elbow, 150 mm diameter			14.000	16.00	15.00	0.571
167 110-8140	PVC duct bank fittings: End bell, 100 mm diameter			18.000	21.00	19.50	0.444
167 110-8180	PVC duct bank fittings: End bell, 150 mm diameter			12.000	14.00	13.00	0.667
167 110-8240	PVC duct bank fittings: Expansion joint, 100 mm diameter			18.000	21.00	19.50	0.444
<b>167 120 FIBER DUCT:</b>							
167 120-0040	Underground duct bank, Fiber type, concrete encased, 180 mm O.C.; 2 duct 50 mm diameter, complete with excavation, concrete, fill & conduit laying	LM	0.125 Foreman 3.000 Electricians 2.000 Common Laborers 0.250 Light Equip. Oper. 0.125 Concrete mixer 0.125 Wheeled Engine Cart 1.000 Heat Bender 0.250 Backhoe	37.460	43.00	40.23	0.320
167 120-0080	Underground duct bank, Fiber type, concrete encased, 180 mm O.C.; 2 duct 100 mm diameter			24.660	28.00	26.33	0.487
167 120-0140	Underground duct bank, Fiber type, concrete encased, 250 mm O.C.; 2 duct 150 mm diameter			18.480	21.00	19.74	0.649
167 120-0600	Fiber duct bank fittings: Elbow, 100 mm diameter	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Tools Set	14.000	16.00	15.00	0.571
167 120-0640	Fiber duct bank fittings: Elbow, 150 mm diameter			11.000	13.00	12.00	0.727
167 120-1900	Fiber duct bank fittings: End bell, 100 mm diameter			14.000	16.00	15.00	0.571

**DIVISION 16: ELECTRICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
167 120-2700	Fiber duct bank fittings: Expansion joint, 150 mm diameter			14.000	16.00	15.00	0.571
<b>168</b>	<b>SPECIAL SYSTEMS</b>						
<b>168 100</b>	<b>SPECIAL SYSTEMS</b>						
<b>168 105</b>	<b>CLOCKS:</b>						
168 105-0080	Clocks, 300 mm diameter, single face	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Tools Set	14.000	16.00	15.00	0.571
168 105-0100	Clocks, 300 mm diameter, double face	"	"	11.000	13.00	12.00	0.727
<b>168 110</b>	<b>CLOCK SYSTEMS:</b>						
168 110-0100	Clock systems, master clock	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Tools Set	0.500	1.00	0.75	16.000
168 110-0200	Clock systems, program bell			14.000	16.00	15.00	0.571
168 110-0400	Clock systems, combination clock & speaker			5.000	6.00	5.50	1.600
168 110-0600	Clock systems, frequency generator			3.500	4.00	3.75	2.286
168 110-0800	Clock systems, job time automatic stamp recorder			6.000	7.00	6.50	1.333
168 110-1400	Clock systems, time stamp for correspondence, fully automatic			6.000	7.00	6.50	1.333
<b>168 120</b>	<b>DETECTION SYSTEMS:</b>						
168 120-0100	Burglar alarm, battery operated, mechanical or electrical trigger	EA	0.125 Electrical Foreman 1.000 Special Electrician 1.000 Helper 1.000 Tools Set	7.000	8.00	7.50	1.143
168 120-0400	Burglar alarm, for outside key control add			13.000	15.00	14.00	0.615
168 120-0600	Burglar alarm, for remote signaling circuitry, interface relay			6.000	7.00	6.50	1.333
168 120-0800	Burglar alarm: Card reader, flush type, standard, or Multi-code			4.500	5.00	4.75	1.778
168 120-1200	Burglar alarm: Door switches, hinge switch, or Magnetic switch			8.000	9.00	8.50	1.000
168 120-1800	Burglar alarm: Exit control locks, horn alarm, or Flashing light alarm			7.000	8.00	7.50	1.143
168 120-2200	Detection system, indicating panels, 10 channel			2.500	3.00	2.75	3.200
168 120-2800	Ultrasonic motion detector, 12V			4.000	5.00	4.50	2.000
168 120-3000	Infrared photoelectric detector			4.000	5.00	4.50	2.000
168 120-3600	Detection system, for fire, sprinkler & standpipe alarm, control panel, 4 zone			3.000	3.00	3.00	2.667
168 120-4000	Detection systems, for fire, sprinkler & standpipe alarm, control panel, 12 zone			1.250	1.00	1.13	6.400
168 120-4200	Fire alarm: battery & rack			6.000	7.00	6.50	1.333
168 120-4200	Fire alarm: automatic charger			10.000	12.00	11.00	0.800
168 120-4300	Fire alarm, break glass alarm switch			15.000	17.00	16.00	0.533
168 120-4500	Fire alarm, alarm bell			15.000	17.00	16.00	0.533
168 120-5000	Fire alarm heat detector, rate of rise			15.000	17.00	16.00	0.533
168 120-5200	Fire alarm smoke detector, ceiling type			12.000	14.00	13.00	0.667
168 120-5400	Fire alarm smoke detector, duct type			5.000	6.00	5.50	1.600
168 120-5800	Fire alarm horn			12.000	14.00	13.00	0.667
168 120-6000	Door holder, electro-magnetic			7.000	8.00	7.50	1.143
168 120-6200	Door holder, combination holder and closer			5.000	6.00	5.50	1.600
168 120-8000	Fire alarm, remote annunciator, 12 zone lamp			2.000	2.00	2.00	4.000
<b>168 125</b>	<b>DOORBELL SYSTEM:</b>						
168 125-0100	Doorbell system including transformer, button & signal bell or buzzer	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Tools Set	8.000	9.00	8.50	1.000
168 125-0200	Doorbell system including transformer, 2 button & 2 signal bell or buzzer in 2 floor house	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Tools Set	5.000	6.00	5.50	1.600
<b>168 130</b>	<b>ELECTRIC HEATING:</b>						
168 130-2400	Electric Heating, baseboard heaters, 2.4m long, 1.5 kW	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Tools Set	8.000	9.00	8.50	1.000
168 130-3150	Electric Heating, wall heaters with fan, surface mounted, residential, 4.00 kW			7.000	8.00	7.50	1.143
168 130-3150	Electric Heating, wall heaters with fan, recessed mounted, residential, 4.00 kW			5.000	6.00	5.50	1.600



**DIVISION 16: ELECTRICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
168 130-3600	Thermostat	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Tools Set	22.000	25.00	23.50	0.364
168 130-4580	Thermostat / contactor combination, 30 amp, 4 pole			4.500	5.00	4.75	1.778
168 130-4600	Thermostat / contactor combination, 50 amp, 4 pole			4.000	5.00	4.50	2.000
<b>168 140</b>	<b>LIGHTNING PROTECTION:</b>						
168 140-0200	Air terminal, copper, 20 mm installed on roofs 24 meter high above grade	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Tools Set	14.000	16.00	15.00	0.571
168 140-0400	Air terminal, copper, 20 mm installed on roofs higher than 24 m add for every 12 m high			12.000	14.00	13.00	0.667
168 140-2000	Cable, Copper 70 mm2 fixed with clamps every 2 meter spacing	KG		125.000	144.00	134.50	0.064
168 140-2500	Cable, Aluminium 95 mm2 fixed with clamps every 2 meter spacing			140.000	161.00	150.50	0.057
168 140-3000	Lightning Arrestor 600 V to ground	EA		10.000	12.00	11.00	0.800
<b>168 145</b>	<b>NURSE CALL SYSTEMS:</b>						
168 145-0100	Nurse Call Systems, single bedside call station	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Tools Set	14.000	16.00	15.00	0.571
168 145-0200	Nurse Call Systems, ceiling speaker station			12.000	14.00	13.00	0.667
168 145-0400	Nurse Call Systems, emergency call station			14.000	16.00	15.00	0.571
168 145-0600	Nurse Call Systems, pillow speaker			14.000	16.00	15.00	0.571
168 145-0800	Nurse Call Systems, double bedside call station			7.000	8.00	7.50	1.143
168 145-1200	Nurse Call Systems, standard call station			18.000	21.00	19.50	0.444
168 145-1400	Nurse Call Systems, lights, corridor, dome or zone indicator			18.000	21.00	19.50	0.444
168 145-1600	Nurse Call Systems, master control station for 20 stations			0.800	1.00	0.90	10.000
<b>168 150</b>	<b>PUBLIC ADDRESS SYSTEM:</b>						
168 150-0100	Public address system, commercial buildings, speaker including wiring rigid steel conduits & head end equip. average	SPEAKER	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Tools Set	1.580	2.00	1.79	5.063
168 150-0200	Public address system, industrial buildings, speaker including wiring & head end equip. average			1.190	1.00	1.10	6.723
168 150-0400	Public address system, industrial buildings, explosionproof installation, speaker including wiring rigid steel conduits & head end equip. average			0.550	1.00	0.78	14.545
<b>168 155</b>	<b>SOUND SYSTEM:</b>						
168 155-0100	Sound system components, Outlet, in rigid steel conduits	EA	0.125 Electrical Foreman 1.000 Electrician 1.000 Helper 1.000 Tools Set	4.080	5.00	4.54	1.961
168 155-0400	Sound system Speakers, ceiling or wall			14.000	16.00	15.00	0.571
168 155-1000	Sound system Monitor panel			6.000	7.00	6.50	1.333
168 155-1200	Sound system Antenna, AM/FM			6.000	7.00	6.50	1.333
168 155-1400	Sound system Volume control			16.000	18.00	17.00	0.500
168 155-1600	Sound system Amplifier, 250W			6.000	7.00	6.50	1.333
168 155-1800	Sound system Cabinets			2.000	2.00	2.00	4.000
168 155-2000	Sound system, Master station for intercom of 25 stations.			2.000	2.00	2.00	4.000
168 155-2400	Sound system, intercom outlet, in rigid steel conduit			3.670	4.00	3.84	2.180
168 155-2800	Emergency call system, 12 zones, annunciator			2.500	3.00	2.75	3.200
168 155-3600	House telephone, talking station			3.000	3.00	3.00	2.667
168 155-4200	House telephone talking system, door release			6.000	7.00	6.50	1.333
168 155-4600	House telephone talking system termination box			5.000	6.00	5.50	1.600
168 155-4800	House telephone talking system Amplifier or power supply			6.000	7.00	6.50	1.333
<b>168 157</b>	<b>Telephone System:</b>						
168 157-0100	Telephone cabinet, indoor 10 pair	EA	1.000 Electrician 1.000 Helper 1.000 Power Tools	4.000	5.00	4.50	2.000
168 157-0120	Telephone cabinet, indoor 25 pair	EA	1.000 Electrician 1.000 Helper 1.000 Power Tools	3.000	3.00	3.00	2.667
168 157-0140	Telephone cabinet, indoor 50 pair			2.000	2.00	2.00	4.000
168 157-0160	Telephone cabinet, indoor 100 pair			1.000	1.00	1.00	8.000
168 157-0180	Telephone cabinet, indoor 200 pair			0.500	1.00	0.75	16.000

# **DIVISION 16: ELECTRICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
168 157-0200	Telephone cabinet, outdoor 10 pair			4.000	5.00	4.50	2.000
168 157-0220	Telephone cabinet, outdoor 25 pair			3.000	3.00	3.00	2.667
168 157-0240	Telephone cabinet, outdoor 50 pair			2.000	2.00	2.00	4.000
168 157-0260	Telephone cabinet, outdoor 100 pair			1.000	1.00	1.00	8.000
168 157-0280	Telephone cabinet, outdoor 200 pair			0.500	1.00	0.75	16.000
<b>168 158</b>	<b>Telephone Cables.</b>						
168 158-0100	Telephone cable, 2 pair, pulled in conduits.	LM	1.000 Electrician 1.000 Helper 1.000 Power Tools	800.000	920.00	860.00	0.010
168 158-0120	Telephone cable, 4 pair			700.000	805.00	752.50	0.011
168 158-0140	Telephone cable, 6 pair			550.000	633.00	591.50	0.015
168 158-0160	Telephone cable, 15 pair			400.000	460.00	430.00	0.020
168 158-0180	Telephone cable, 25 pair			325.000	374.00	349.50	0.025
168 158-0200	Telephone cable, 50 pair			250.000	288.00	269.00	0.032
168 158-0240	Telephone cable, 80 pair			200.000	230.00	215.00	0.040
168 158-0280	Telephone cable, 100 pair			175.000	201.00	188.00	0.045
<b>168 320</b>	<b>T.V. SYSTEMS:</b>						
168 160-0200	Master TV antenna system, VHF reception	EA	0.125 Electrical Foreman 1.000 Special Electrician 1.000 Helper 1.000 Tools Set	6.000	7.00	6.50	1.333
168 160-0800	Master TV antenna system, VHF & UHF reception			6.000	7.00	6.50	1.333
168 160-2000	Closed circuit TV system, surveillance, one station (camera & monitor)			3.000	3.00	3.00	2.667
168 160-2200	Closed circuit TV system, Add for each added camera...			5.000	6.00	5.50	1.600
168 160-2800	Closed circuit TV system, surveillance, one station, monitor & weatherproof camera			2.000	2.00	2.00	4.000
168 160-3000	Closed circuit TV system, surveillance, one station, monitor & 1 pan & tilt camera			2.000	2.00	2.00	4.000
168 160-3200	Closed circuit TV system, industrial quality, for zoom lens-remote control, add Average.			2.000	2.00	2.00	4.000
168 160-5000	TV System distribution pedestal including 8 ports			2.500	3.00	2.75	3.200
168 160-5300	TV System distribution pedestal including splitter			4.000	5.00	4.50	2.000
168 160-5600	TV System distribution pedestal including Line or Trunk amplifier			4.000	5.00	4.50	2.000
168 160-7000	TV head end Equipment, including cabinets, amplifiers, receivers for 10 channels			0.600	1.00	0.80	13.333
168 160-7600	TV head end Satellite up to 15 m diameter installed on grade.			1.250	1.00	1.13	6.400
<b>168 170</b>	<b>RESIDENTIAL WIRING:</b>						
168 170-1100	Residential wiring, lighting outlet, 4 LM average run to Panel. Lighting switch conduits at 5 LM avg., including wires 3x4 mm2 PVC conduits & accessories complete wiring to panel, including lighting switch, 8 outlets per circuit	EA	0.125 Electrical Foreman 2.000 Electrician 1.000 Helpers 1.000 Tools Set	4.280	5.00	4.64	1.869
168 170-1200	Residential wiring, lighting outlet, 4 LM average run to Panel, including wires 3x4 mm2, PVC conduits & accessories complete wiring to panel, not including lighting switch, 8 outlets per circuit			9.410	11.00	10.21	0.850
168 170-1300	Residential wiring, lighting outlet, 4 LM average run to Panel, including wires 3x4 mm2, PVC conduits & accessories complete wiring to panel, not including lighting switch, 6 outlets per circuit			6.680	8.00	7.34	1.198
168 170-1600	Residential wiring, Power Receptacle Outlet average run to panel 12 LM, including wires 3x6 mm2 PVC conduits & accessories complete wiring to panel Average. 1 outlet per circuit			3.300	4.00	3.65	2.424
168 170-1900	Residential wiring, Range Receptacle Outlet average run 15 LM, including wires 4x16 mm2 PVC conduits & accessories complete wiring to panel, 1 outlet per circuit			1.540	2.00	1.77	5.195
168 170-2100	Residential wiring, Dryer Receptacle Outlet average run 15 LM, including wires 3x10 mm2 PVC conduits & accessories complete wiring to panel, 1 outlet per circuit			2.120	2.00	2.06	3.771
168 170-3000	Residential wiring, lighting outlet average spacing 4 LM, including wires 3x4 mm2 EMT conduits & accessories complete wiring to panel, 8 outlets per circuit, lighting switch not included			7.280	8.00	7.64	1.099
168 170-3200	Residential wiring, Receptacle Outlet, 6 LM average run per outlet to panel, including wires 3x4 mm2, EMT conduits & accessories complete wiring to panel, 6 outlets per circuit			9.530	11.00	10.27	0.835
168 170-5600	Residential wiring, Power Receptacle Outlet average run to panel 12 LM, including wires 3x6 mm2 IMC conduits & accessories complete wiring to panel Average. 1 outlet per circuit			2.680	3.00	2.84	2.300
168 170-5700	Residential wiring, Dryer Receptacle Outlet average run 15 LM, including wires 3x10 mm2, IMC conduits & accessories complete wiring to panel, 1 outlet per circuit			1.620	2.00	1.82	4.920
168 170-6600	Residential wiring, Range Receptacle Outlet average run to panel 15 LM, including wires 3x16 mm2, Galv. rigid steel conduits & accessories complete wiring to panel average, 1 outlet per circuit	EA	0.125 Electrical Foreman 2.000 Electrician 1.000 Helpers 1.000 Tools Set	1.170	1.00	1.09	6.836



# **DIVISION 16: ELECTRICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
<b>169</b>	<b>POWER TRANSMISSION &amp; DISTRIBUTION</b>						
<b>169 100</b>	<b>POWER TRANSMISSION &amp; DISTRIBUTION</b>						
<b>169 110</b>	<b>LINE POLES &amp; FIXTURES:</b>						
169 110-0010	Digging holes in earth, for pole, up to 18 m high	EA	0.125 Labor Foreman 1.000 Common Laborer 1.000 Tools Set	2.750	3.00	2.88	2.909
169 110-0105	Digging holes in earth, for pole up to 18 m high, in rock, average	EA	0.125 Labor Foreman 1.000 Common Laborer 1.000 Equip. operator 1.000 compressor & hoses	1.500	2.00	1.75	5.333
169 110-0200	Wood poles up to 20 meter long, material handling and spotting		1.000 Skilled Foreman 5.000 Electrician Groundmen 1.000 truck driver 2.000 Common Laborers 1.000 Crew Truck	8.000	9.00	8.50	1.000
169 110-0220	Erect wood poles up to 18 m above ground, in earth		1.000 Skilled Foreman 2.000 Equipment Operators 4.000 Electrician Lineman 4.000 Electrician Groundmen 1.000 Crew Truck 1.000 Tool Van 1.000 Pick-up Truck 0.250 Crane, 11 metric ton	5.000	6.00	5.50	5.200
169 110-0250	Erect wood poles up to 18 m above ground, in rock	↓	..	4.500	5.00	4.75	5.778
169 110-0260	Disposal of surplus material	1000 LM	1.000 Skilled Foreman 5.000 Electrician Groundmen 1.000 truck driver 2.000 Common Laborers 1.000 Crew Truck	15.000	17.00	16.00	0.533
169 110-0320	Install crossarms for wood structures	EA	1.000 Skilled Foreman 2.000 Equipment Operators 4.000 Electrician Lineman 4.000 Electrician Groundmen 1.000 Crew Truck 1.000 Tool Van 1.000 Pick-up Truck 0.250 Crane, 11 metric ton	7.000	8.00	7.50	3.714
169 110-0420	Erect formed steel plate pole, up to 18 m above ground			1.000	1.00	1.00	26.000
169 110-0500	Guys, anchors and hardware for pole up to 18 m above ground, in earth			6.000	7.00	6.50	4.333
169 110-0510	Guys, anchors and hardware for pole up to 18 m high above ground, in rock	↓	↓	4.000	5.00	4.50	6.500
<b>169 120</b>	<b>LINE TOWERS &amp; FIXTURES:</b>						
169 120-0200	Line towers, steel footings (grillage) in earth	TON	1.000 Skilled Foreman 2.000 Equipment Operators 4.000 Electrician Lineman 4.000 Electrician Groundmen 1.000 Crew Truck 1.000 Tool Van 1.000 Pick-up Truck 0.250 Crane, 11 metric ton 0.250 Auger, Truck Mounted	3.000	3.00	3.00	9.333
169 120-0400	Line tower, concrete foundations	<b>See also Div. 033</b>					
169 120-0500	Towers-material handling and spotting	TON	1.000 Skilled Foreman 4.000 Electrician Groundmen 1.000 Equipment Operator 1.000 truck driver 2.000 Common Laborers 1.000 Crew Truck 1.000 Crane Mobile 50 Ton.	20.000	23.00	21.50	0.800
169 120-0540	Steel Tower erection, up to 66 KV	..	1.000 Skilled Foreman 2.000 Equipment Operators 4.000 Electrician Lineman 4.000 Electrician Groundmen 1.000 Crew Truck 1.000 Tool Van 1.000 Pick-up Truck 0.250 Crane, 11 metric ton 0.250 Auger, Truck Mounted	3.000	3.00	3.00	9.333
169 120-0560	Painting tower structure, average	VERT. LM	2.000 Painters 1.000 Common Laborer 1.000 Consumable Tools	12.000	14.00	13.00	0.000
<b>169 130</b>	<b>OVERHEAD LINE CONDUCTORS &amp; DEVICES:</b>						
169 130-0110	Conductors, primary circuits, material handling and spotting	1000 LM	1.000 Skilled Foreman 1.000 Equip. Operators 4.000 Electrician Groundmen 1.000 Truck Driver 2.000 Common Laborer 1.000 Crew Truck 1.000 Crane, 50 metric ton	15.000	17.00	16.00	1.067

**DIVISION 16: ELECTRICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	CREW STRUCTURE	D. O. MIN.	D. O. MAX.	D. O. AVRG.	AVRG. E. H.
169 130-0150	Installing conductors, per wire, 100 mm <sup>2</sup> - 300 mm <sup>2</sup>	1000 LM	1.000 Skilled Foreman 4.000 Electrician Lineman 1.250 Equip. Operators 4.000 Electrician Groundmen 2.000 Drivers 1.000 Crew Truck 1.000 Tool Van 1.000 Pick-up Truck 0.250 Crane, 50 metric ton 3.000 Cable Trailer 1.000 Cable Winch	2.000	2.00	2.00	29.000
169 130-0160	Installing conductors, per wire, 300 mm <sup>2</sup> - 500 mm <sup>2</sup>	1000 LM	1.000 Skilled Foreman 4.000 Electrician Lineman 1.250 Equip. Operators 4.000 Electrician Groundmen 2.000 Drivers 1.000 Crew Truck 1.000 Tool Van 1.000 Pick-up Truck 0.250 Crane, 50 metric ton 3.000 Cable Trailer 1.000 Cable Winch	1.800	2.00	1.90	32.222
169 130-0300	Conductors, joints and dead ends	EA	1.000 Skilled Foreman 3.000 Electrician Lineman 2.000 Electrician Groundmen 1.000 Pick-up Truck 1.000 Crew Truck	5.000	6.00	5.50	3.200
169 130-0400	Conductors, sagging	1000 LM	1.000 Skilled Foreman 4.000 Electrician Lineman 1.250 Equip. Operators 4.000 Electrician Groundmen 2.000 Drivers 1.000 Crew Truck 1.000 Tool Van 1.000 Pick-up Truck 0.250 Crane, 50 metric ton 3.000 Cable Trailer 1.000 Cable Winch	80.000	92.00	86.00	0.725
169 130-0700	Installing spacers between conductors	EA	1.000 Skilled Foreman 4.000 Electrician Lineman 1.000 Electrician Groundman 1.000 Driver 1.000 Crew Truck	50.000	58.00	54.00	0.160
169 130-0810	Disposal of surplus conductor material	EA	1.000 Electrical Foreman 1.000 Electrician Groundman 1.000 Truck Driver 4.000 Common Laborers 1.000 Crew Truck	8.000	9.00	8.50	1.000
169 130-1000	Install disk insulators, up to 66 kV, including material handling & spotting	EA	1.000 Skilled Foreman 2.000 Equipment Operator 4.000 Electrician Lineman 4.000 Electrician Groundmen 1.000 Crew Truck 1.000 Tool Van 0.250 Crane, 11 metric ton	150.000	173.00	161.50	0.120
169 130-1340	Installation of overhead ground wire, including handling & spotting	1000 LM	1.000 Skilled Foreman 1.000 Electrician Lineman 1.250 Equip. Operators 1.000 Electrician Groundmen 2.000 Drivers 1.000 Crew Truck 1.000 Tool Van 1.000 Pick-up Truck 0.250 Crane, 50 metric ton 1.000 Cable Trailer 1.000 Cable Winch	1.000	1.00	1.00	42.000
<b>169 140 TRANSMISSION LINE RIGHT OF WAY:</b>							
169 140-0100	Clearing right of way for transmission line	KM	1.000 Labor Foreman 1.000 Surveyor 2.000 Laborer 2.000 Equip. Operator (incl.) 1.000 Hauling Truck 1.000 Doser, 78 kW	4.000	5.00	4.50	4.000
<b>169 150 SUBSTATION EQUIPMENT:</b>							
169 150-1050	Power transformers, 11 to 33 KV	KVA	1.000 Skilled Foreman 4.000 Electrician, Specialist 1.000 Equip. Operator 1.000 Driver 2.000 Common Laborer 1.000 Crew Truck 1.000 Crane, 11 metric ton	0.750	1.00	0.88	21.333
169 150-1300	Station capacitors synchronous 11 to 33 KV	MVAR		2.500	3.00	2.75	6.400
169 150-1600	Voltage regulators, 11 to 33 KV	EA		0.750	1.00	0.88	21.333
169 150-2050	Power circuit breakers, oil circuit breakers, 11 to 33 KV			1.000	1.00	1.00	16.000
169 150-2100	Air circuit breakers, 11 to 33 KV			0.500	1.00	0.75	32.000
169 150-2150	Gas circuit breakers, 11 to 33 KV			0.500	1.00	0.75	32.000
169 150-2200	Vacuum circuit breakers, 11 to 33 KV			0.500	1.00	0.75	32.000
169 150-3060	Disconnecting switches, gang operated, manual operation, 11 to 33 KV	EA	1.000 Skilled Foreman 4.000 Electrician, Specialist 1.000 Equip. Operator 1.000 Driver 2.000 Common Laborer 1.000 Crew Truck 1.000 Crane, 11 metric ton	1.750	2.00	1.88	9.143
169 150-4050	Instrument transformers, current transformers, 11 to 33 KV			12.000	14.00	13.00	1.333
169 150-4100	Instrument transformers, potential transformers, 11 to 33 KV			9.000	10.00	9.50	1.778
169 150-8000	Protective equipment, lightning arresters, 11 to 33 KV			15.000	17.00	16.00	1.429
169 150-8150	Protective equipment, reactors and resistors, 11 to 33 KV			20.000	23.00	21.50	1.261
169 150-8250	Protective equipment, fuses, 11 to 33 KV			15.000	17.00	16.00	1.087
169 150-9120	Station Battery charges			12.000	14.00	13.00	1.333
169 150-9200	Station control batteries			12.000	14.00	13.00	1.333



# M a t e r i a l





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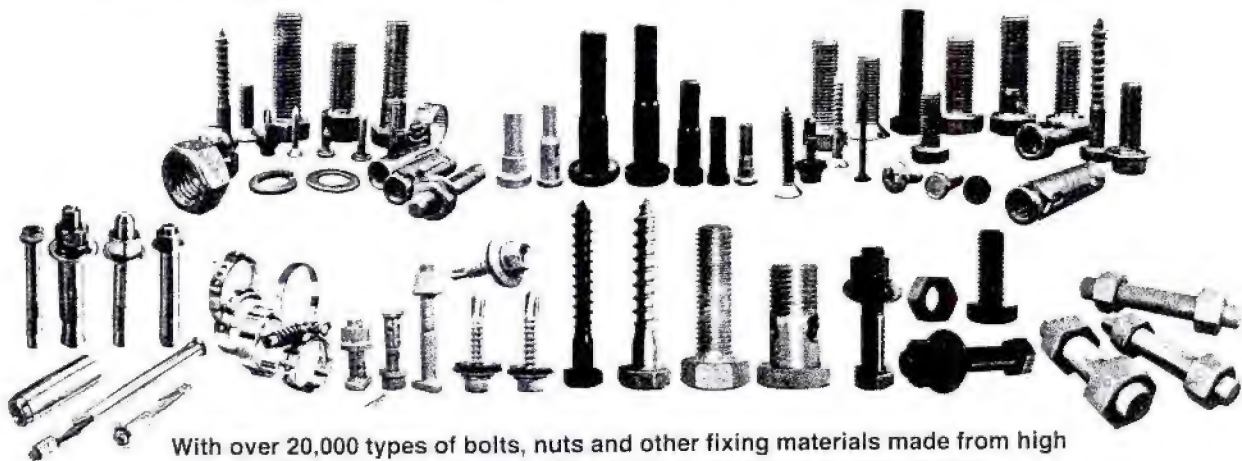
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## All Types of Fasteners & Fixings



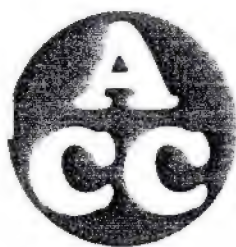
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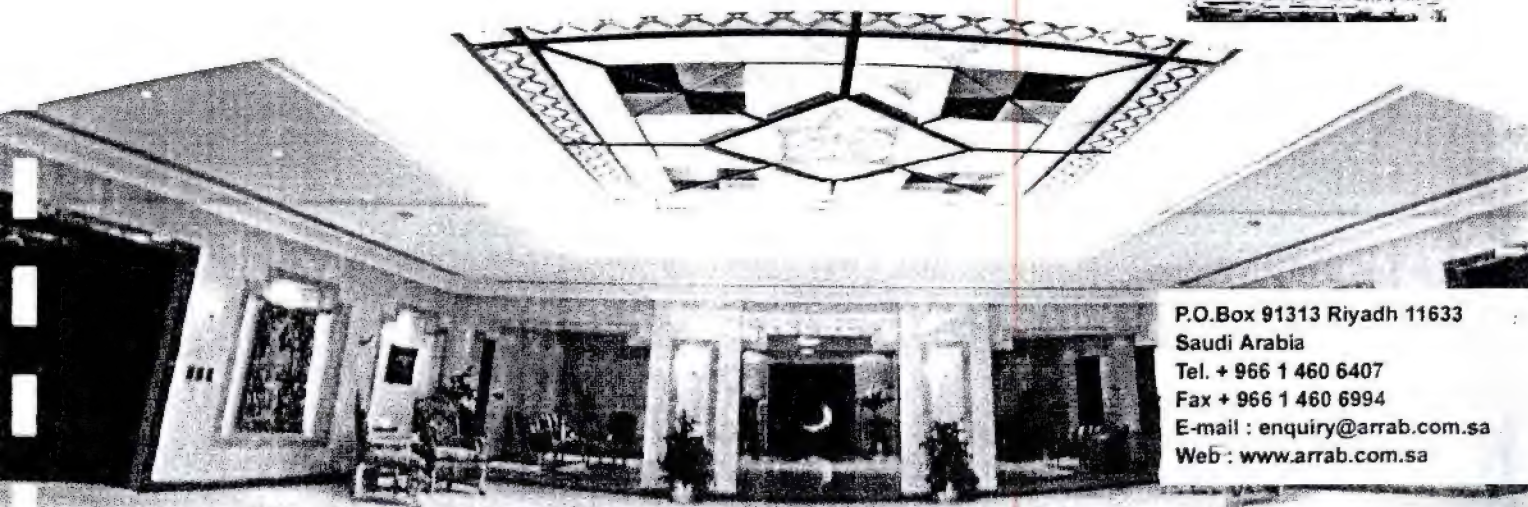
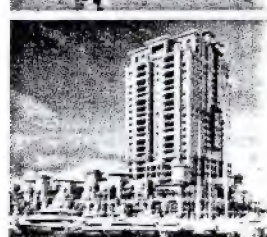
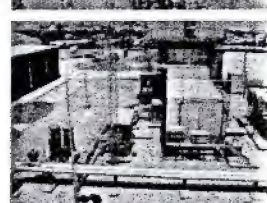
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## How to Use the Price Pages

The following is a detailed explanation of a sample entry in the Unit Price Section. Next to each bold number below is the item being described with appropriate component of the sample entry following in parenthesis. Some prices are listed as bare cost, others as costs that include overhead and profit of the installing contractor. In most cases, if the work is to be subcontracted, the general contractor will need to add an additional markup (Projacs suggest using 10%) to the figures in the column.

### Division Number / Title

**(031/ Concrete Formwork)**

Use the Unit Price Section Table of contents to locate Specific items. The sections are classified according to The CSI MasterFormat.

### Line Numbers

**(031 142 0500)**

Each unit price line item has been assigned a unique 10-digit code based on the 5-digit CSI MasterFormat.

### Item Description

**(Column form, Round, fiberglass, etc.)**

Each line item is described in detail. Sub-items and Additional sizes are indented beneath the appropriate Line items. The first line or two after the main item (in bold face) may contain descriptive information that pertains to all line items beneath this boldface listing.

### Cost Per Unit (SR)

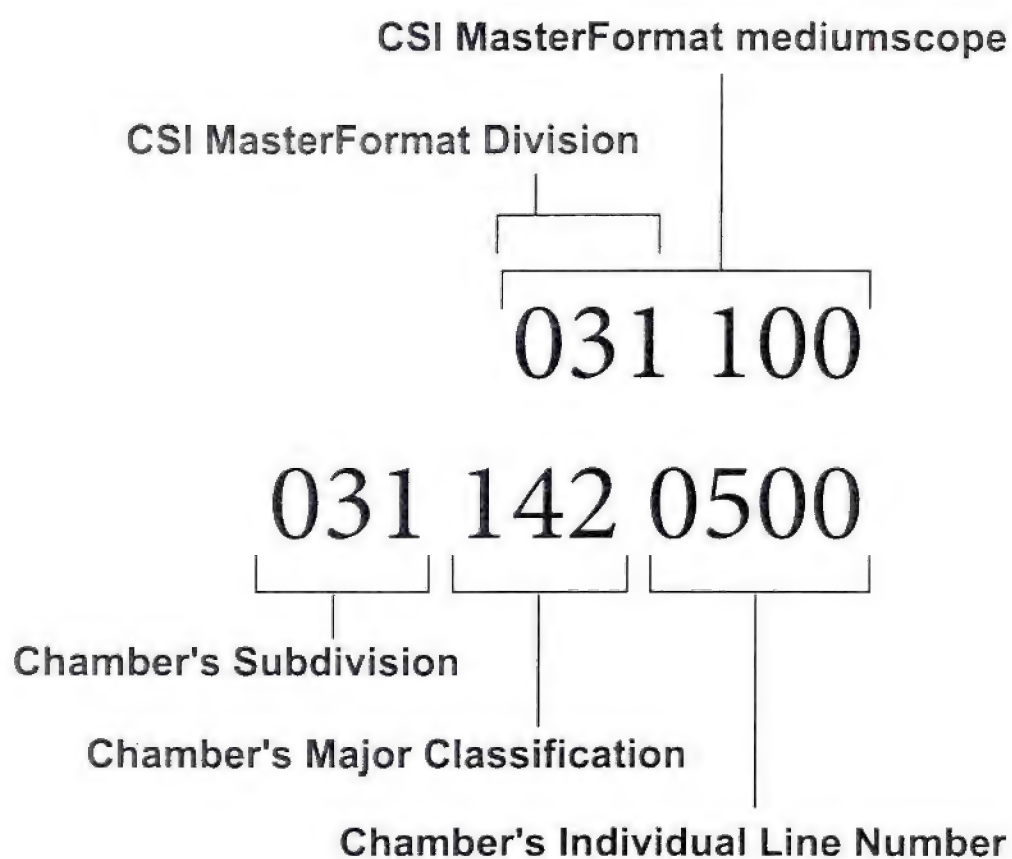
**(COST per unit item in Saudi Riyals)**

this figure for the unit material cost for the line item is the "bare" material cost with no overhead and profit allowances included. Costs shown reflect national average material prices for the year 2001 and include delivery to the job site. (1\$=3.76 SR)

## DIVISION 3 : CONCRETE

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
<b>031</b>	<b>CONCRETE FORMWORK</b>		
<b>031 100</b>	<b>STRUCT C.I.P. FORMWORK</b>		
<b>031 110</b>	<b>ACCESSORIES, ANCHOR BOLTS Incl. nut and washer</b>		
031 110-0050	Anchor bolt, including nut & washer, 12 mm Diameter, 240 mm	EA	4.60
031 110-0300	Anchor bolt, including nut & washer, 16 mm Diameter, 310 mm Long		6.80
031 110-0450	Anchor bolt, including nut & washer, 20 mm Diameter, 270 mm Long		13.50

## CSI Line Numbers / Chamber Line Numbers:



NOTE: Chamber Means Riyadh Chamber of Commerce & Industry



A decorative geometric pattern, likely a traditional Islamic or Arabesque design, is located in the top right corner of the page. It features a complex, repeating lattice of lines forming various polygonal shapes, with some areas filled with a stippled or textured pattern. The pattern is rendered in shades of gray and black.

# Division 1

## General Requirements



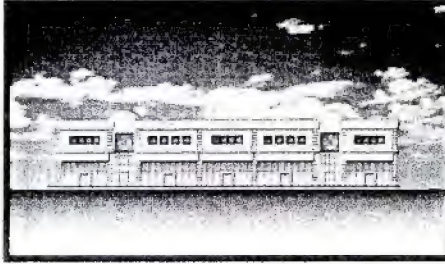


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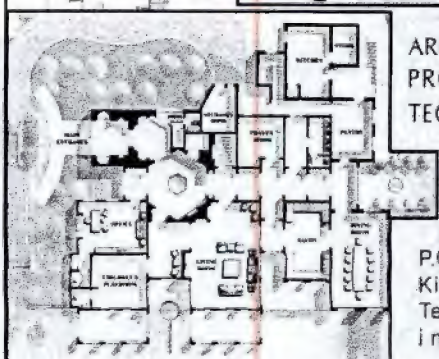
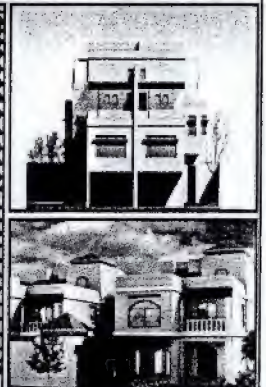
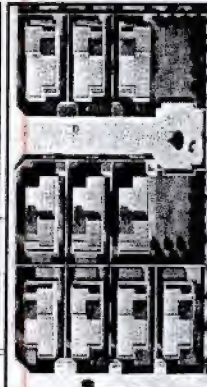


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A decorative geometric pattern, possibly a woodcut or metalwork design, featuring a complex interlocking star and polygon motif. It is located in the top right corner of the page, partially overlapping the white background.

# Division 2

## Site Works



أبو سليمان الراجي

Abu Suliman Al - Rajhi

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# المنظور الحديث عمارة و تخطيط

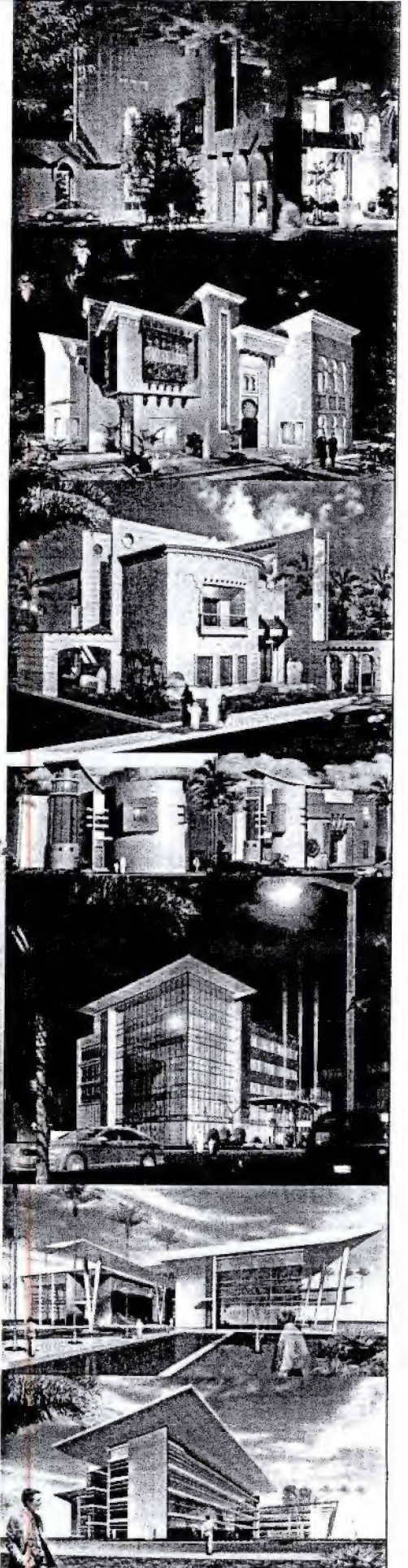
مكتب المنظور الحديث للعمارة والتخطيط تم تأسيسها في المملكة العربية السعودية في 2002م. نحن متخصصون في العمارة، والتخطيط العمراني وسياسات التنمية نعمل جامدين على مد جسور التواصل بيننا وبين عملائنا في القطاعين العام والخاص بمنظومة من خدمات التصميم، التخطيط و سياسات التنمية والاستشارات في مجالات الخدمات الأخرى.

إن هذه المنظومة من الخبرات والمعرفة العالمية تتيح لنا مدى واسع من القدرات على تقديم خدمة متميزة في كل مجالات النشاط العملي التي تغطي مبادئ واسعة من التنمية.

## NEW PERSPECTIVE



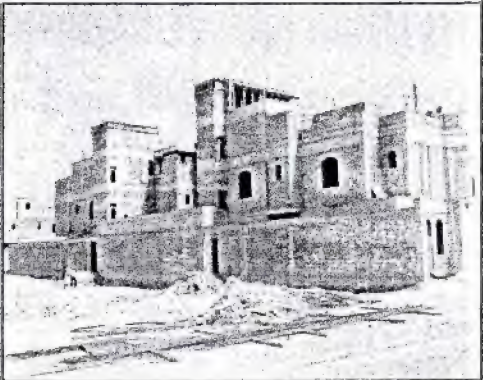
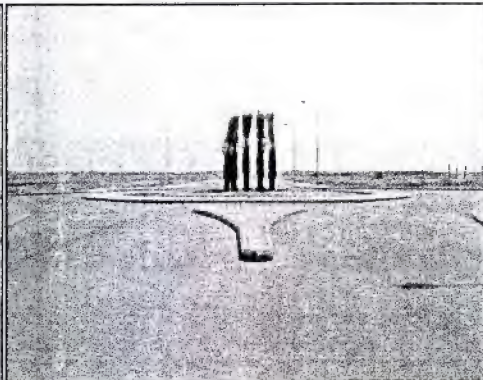
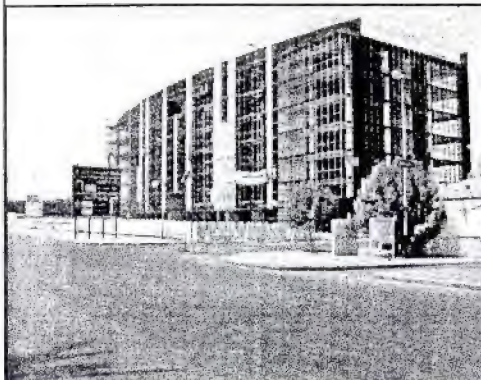
## ARCHITECTURE & PLANNING



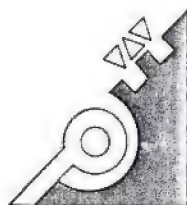




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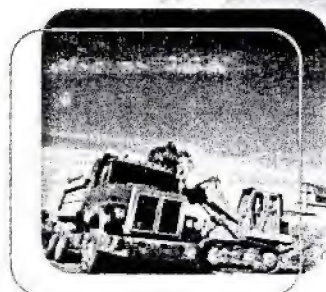
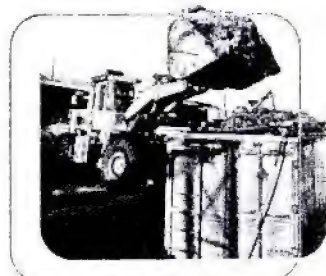


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**Division 02 : SITE WORK**

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT
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**020 SUBSURFACE INVESTIGATION & DEMOLITION****020 120 STANDARD PENETRATION TESTS****020 125 DRILLING, CORE:**

020 125-0100	Core bit 25 mm dia. upto 300 mm depth	EA	760.00
020 125-0300	Core bit 152 mm dia. upto 430 mm depth		3,024.00
020 125-0350	Core bit 202mm dia. upto 430 mm depth		4,492.00
020 125-0750	Core bit 400 mm dia. upto 500 mm depth	↓	9,184.00

**022 EARTHWORK:****022 300 PAVEMENT BASE:****022 308 BASE COURSE:**

022 308-0300	Base course, 20 mm stone	CUM	26.00
022 308-0320	Base course, crushed 40 mm stone	..	26.00
022 308-0570	Base course bituminous concrete, metric ton	TON	60.00
022 308-0700	Liquid application to gravel base, asphalt emulsion (200 Ltr./Drum)	DRUM	390.00

**022 400 SOIL STABILIZATION****022 408 GROUTING PRESSURE:**

022 408-0200	Grouting, cement & sand 1:1 mix, average	CUM	488.64
022 408-0400	Cement grouting (30 kg/bag)	KG	1.30
022 408-0500	Geotextile fabric, non-woven needle-punched 100 gm/m2	SQM	1.35
022 408-0510	Geotextile fabric, non-woven needle-punched 120 gm/m2		1.62
022 408-0520	Geotextile fabric, non-woven needle-punched 140 gm/m2		1.89
022 408-0530	Geotextile fabric, non-woven needle-punched 200 gm/m2		2.70
022 408-0540	Geotextile fabric, non-woven needle-punched 300 gm/m2	↓	4.05
022 408-0800	Hydrated lime, for base, 2% To 6% mix by weight	TON	550.00

**022 700 SLOPE PROTECTION & EROSION CONTROL****022 704 EROSION CONTROL:**

022 704-0010	Jute mesh, 1200 mm wide, 85 SQM/roll	SQM	2.58
022 704-0200	Polypropylene mesh, 220 gram/SQM		14.00
022 704-0210	Silt fence, polypropylene	↓	7.00

**022 712 RIP-RAP:**

022 712-0100	Rip-rap, random broken stone, for slope protection, 0.29 to 0.19 cum pieces	CUM	260.00
022 712-0600	Gabions, galvanized steel mesh, stone filled, 300 mm deep		91.20
022 712-0800	Gabions, galvanized steel mesh, stone filled, 900 mm deep	↓	213.43

**023 TUNNELING, PILES & CAISSONS****023 600 DRIVEN PILES****023 604 PILES CONCRETE:**

023 604-1210	Bored cast in situ piles, 500mm diameter	LM	281.75
023 604-1230	Bored cast in situ piles, 750mm diameter		310.50
023 604-1250	Bored cast in situ piles, 1000mm diameter	↓	350.75

**023 608 PILES STEEL:**

023 608-0400	Piles steel "H" sections, 18 m long, 250 mm x 250 mm, 63 kg/m	LM	229.20
023 608-0800	Piles steel "H" sections, 18 m long, 300 mm x 300 mm, 110 kg/m		268.75
023 608-1000	Piles steel "H" sections, 18 m long, 350 mm x 350 mm, 109 kg/m	↓	395.42



## Division 02 : SITE WORK

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT
<b>024</b>	<b>RAILROAD AND MARINE WORK</b>		
<b>024 520</b>	<b>RAILROAD TRACKWORK</b>		
<b>024 524</b>	<b>RAILROAD:</b>		
024 524-0010	Car bumpers heavy duty	EA	7,178.60
024 524-1020	Rail 47 Kg	LM	517.51
024 524-2400	Wheel stops	PR.	1,200.00
<b>025</b>	<b>PAVING &amp; SURFACING</b>		
<b>025 100</b>	<b>WALK/ROAD/PARKING PAVING</b>		
<b>025 104</b>	<b>ASPHALTIC CONCRETE PAVEMENT:</b>		
025 104-0810	Asphalt concrete pavement,binder course	MET.TON	75.00
025 104-0850	Asphalt concrete pavement,wearing course	"	75.00
<b>025 128</b>	<b>SIDEWALKS,DRIVEWAYS, &amp; PATIOS</b>		
025 128-1000	Sidewalk,crushed stone, white marble	CUM	2,800.00
025 128-1660	Sidewalk,limestone pavers, 215 mm x 102.5 mm 65 mm	1000 PCS	350.00
025 128-1670	Sidewalk,limestone pavers, 215 mm x 50 mm x 65 mm		300.00
025 128-1680	Sidewalk,limestone pavers, 215 mm x 205 mm x 65 mm	↓	720.00
<b>025 150</b>	<b>UNIT PAVERS</b>		
<b>025 158</b>	<b>BRICK PAVING:</b>		
025 158-0300	Brick pavers, 100 mm x 200 mm x 80 mm	SQM	1,050.00
<b>025 162</b>	<b>CONCRETE BLOCK PAVERS:</b>		
025 162-0720	Pavers Precast concrete 50 mm thick, 400 mm x 400 mm	SQM	10.00
<b>025 166</b>	<b>STONE PAVERS:</b>		
025 166-1100	Stone pavers,irregular, 25 mm thick	SQM	60.00
025 166-1250	Stone pavers,random,rectangular, 50 mm thick		48.00
025 166-1550	Pavers,granite blocks, 90 mm x 90 mm x 90 mm	↓	1,900.00
<b>025 250</b>	<b>CURBS</b>		
<b>025 254</b>	<b>CURBS:</b>		
025 254-0300	Curbs, Concrete, 200 mm x 400 mm precast	LM	43.00
025 254-0350	Curbs, Concrete, 250 mm x 300 mm x 150 mm		14.00
025 254-0360	Curbs, Concrete, 500 mm x 200 mm x 150 mm		9.00
025 254-0370	Curbs, Concrete, 500 mm x 300 mm x 100 mm		9.00
025 254-0380	Curbs, Concrete, 500 mm x 300 mm x 150 mm		10.00
025 254-0550	Curb & gutter precast, 200 mm high curb, 150 mm thick gutter, 1.2 m, straight		35.00
025 254-0600	Concrete gutters 150 mm x 150 mm x 150 mm	↓	9.84
<b>025 300</b>	<b>ATHLETIC PAVE/SURFACING</b>		
<b>025 304</b>	<b>RUNNING TRACK:</b>		
025 304-0010	Running tack surfacing rubberized flooring	SQM	175.00
025 304-0020	Artificial grass for soccer field		6.00
025 304-0030	Outdoor multipurpose rubberized flooring		165.00
025 304-0040	Outdoor multipurpose acrylic flooring	↓	50.00
<b>025 308</b>	<b>TENNIS COURT:</b>		
025 308-1400	Tennis court,post & net	SET	1,325.00
025 308-1700	Tennis court,net, 13 m long,nylon thread with binder	EA	840.00



## Division 02 : SITE WORK

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT
<b>025 400</b>	<b>SYNTHETIC SURFACING</b>		
<b>025 404</b>	<b>TURF, ARTIFICIAL:</b>		
025 404-0910	Artificial turf	SQM	6.00
<b>026</b>	<b>PIPED UTILITIES</b>		
<b>026 050</b>	<b>MANHOLES &amp; CLEANOUTS</b>		
<b>026 054</b>	<b>UTILITY VAULTS:</b>		
026 054-0100	Reinforced Concrete circular type manholes, inner dia 1200 mm with 180 mm wall thickness, 3 m high installed with galvanized steel steps @ 30 cm center to center, externally coated with bitumen emulsion	EA	995.00
026 054-0300	Reinforced Concrete circular type manholes, inner dia 600 mm with 140 mm wall thickness, 3 m high installed with galvanized steel steps @ 30 cm center to center, externally coated with bitumen emulsion	EA	482.00
<b>026 400</b>	<b>VALVES &amp; COCKS</b>		
<b>026 404</b>	<b>PIPING VALVES: <i>Water distribution, see also DIV.151-900</i></b>		
026 404-3100	Piping valve,butterfly, cast iron,mechanical joint, 100 mm diameter (4")	EA	2,352.70
026 404-3180	Piping valve,butterfly, cast iron,mechanical joint, 200 mm diameter (8")		2,975.00
026 404-3190	Piping valve,butterfly,double flanged,double eccentric,gear operated, 200 mm diameter (8")		3,609.20
026 404-3500	Piping valve,butterfly, cast iron,mechanical joint, 600 mm diameter (24") lever operated		22,656.00
026 404-3510	Piping valve,butterfly,double flanged,double eccentric,gear operated, 600 mm diameter (24")		24,745.00
026 404-3610	Piping valve,butterfly, cast iron,mechanical joint,& with lever operator size 100 mm		2,722.30
026 404-3616	Piping valve,butterfly, cast iron,mechanical joint,& with lever operator size 200 mm		5,000.00
026 404-3714	Piping valve,check,flanged 150mm diameter		2,300.20
026 404-3716	Piping valve,check,flanged 200 mm diameter		4,186.00
026 404-3720	Piping valve,check,flanged 300 mm diameter		10,955.70
026 404-3810	Piping valve,gate,flanged, 100 mm diameter		2,150.00
026 404-3814	Piping valve,gate,flanged,150 mm diameter		1,050.00
026 404-3816	Piping valve,gate,flanged, 200 mm diameter		2,100.00
026 404-3820	Piping valve,gate,flanged, 300 mm diameter		4,400.00
026 404-3842	Piping valve,gate,flanged with boxes,size 100 mm diameter		581.00
026 404-3850	Piping valve,gate,flanged with boxes,size 300 mm diameter		1,200.00
026 404-3860	Piping valve,gate,flanged with boxes,size 600 mm diameter		34,064.80
026 404-3910	Piping valve,globe,flanged,iron body,size 100 mm diameter		930.30
026 404-3914	Piping valve,globe,flanged,iron body,size 150 mm diameter		930.30
026 404-3916	Piping valve,globe,flanged,iron body,size 200 mm diameter	▼	1 472.10
<b>026 450</b>	<b>HYDRANTS</b>		
<b>026 454</b>	<b>PIPING WATER DISTRIBUTION:</b>		
026 454-2400	Hydrant,low barrel extensions with stems, 300 mm	EA	3 507.00
026 454-2520	Hydrant,low barrel extensions with stems, 1200 mm		4 557.00
026 454-2600	Hydrant,dry barrel extensions with stems, 100 mm		2,866.50
026 454-2420	Hydrant,dry barrel extensions with stems, 150 mm		3,692.85



## Division 02 : SITE WORK

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT
026 454-5060	Hydrant, indicating post, adjustable, valve size 100 mm to 350 mm, 2.5 m bury	↓	4,851.00
026 454-5070	Hydrant, indicating post, adjustable, valve size 100 mm to 600 mm, 2.5 m bury	EA	1,928.85
<b>026 650</b>	<b>WATER SYSTEMS</b>		
<b>026 686</b>	<b>PIPING WATER DISTRIBUTION:</b>		
026 686-1410	Water pipings, ductile iron cement lined, push on joints, sections 6 m long, size 100 mm (4")	EA	660.00
026 686-1420	Water pipings, ductile iron cement lined, push on joints, sections 6 m long, size 150 mm (6")	EA	840.00
026 686-1430	Water pipings, ductile iron cement lined, push on joints, sections 6 m long, size 200 mm (8")	EA	990.00
026 686-1440	Water pipings, ductile iron cement lined, push on joints, sections 6 m long, size 250 mm (10")		1,230.00
026 686-1470	Water pipings, ductile iron cement lined, push on joints, sections 6 m long, size 300 mm (12")		1,500.00
026 686-1460	Water pipings, ductile iron cement lined, push on joints, sections 6 m long, size 400 mm (16")		2,700.00
026 686-1470	Water pipings, ductile iron cement lined, push on joints, sections 6 m long, size 350 mm (14")		2,100.00
026 686-1471	Water pipings, ductile iron cement lined, push on joints, sections 6 m long, size 500 mm (20")		2,760.00
026 686-1570	Water pipings, ductile iron cement lined, push on joints, sections 6 m long, size 600 mm (24")		3,600.00
026 686-2700	Water piping, PVC, Class 5, 50 mm diameter		30.04
026 686-2900	Water piping, PVC, Class 5, 160 mm diameter		47.54
026 686-2950	Water piping, PVC, Class 5, 225 mm diameter		73.00
026 686-8000	Fittings, ductile iron, mechanical joint, 90 deg. bend 300 mm diameter (12")		796.00
026 686-8010	Fittings, ductile iron, flanged, 90 deg. bend 300 mm diameter (12")		796.00
026 686-8020	Fittings, ductile iron, mechanical joint, 90 deg. bend 150 mm diameter (6")		256.00
026 686-8040	Fittings, ductile iron, double socket bend 90 deg. 100 mm		110.00
026 686-8080	Fittings, ductile iron, double socket bend 90 deg. 150 mm		200.00
026 686-8120	Fittings, ductile iron, double socket bend 90 deg. 200 mm		330.00
026 686-8200	Fittings, ductile iron, double socket bend 90 deg. 300 mm		700.00
026 686-8220	Fittings, ductile iron, double flange 90 deg. 100 mm		110.00
026 686-8240	Fittings, ductile iron, double flange 90 deg. 150 mm		185.00
026 686-8280	Fittings, ductile iron, double flange 90 deg. 200 mm		280.00
026 686-8470	Fittings, ductile iron, double flange 90 deg. 400 mm		1,390.00
026 686-8480	Fittings, ductile iron, double flange 90 deg. 300 mm		695.00
026 686-8490	Fittings, ductile iron, wye or tee, 150mm diameter (4") socket		293.00
026 686-8500	Fittings, ductile iron, wye or tee, 150mm diameter (6") socket	↓	370.00
<b>026 700</b>	<b>WATER WELLS</b>		
<b>026 704</b>	<b>WELLS:</b>		
026 704-1900	Water pump, for wells to 30 m deep, 100 mm submersible, 3 HP (cast iron)	EA	3,000.00
026 704-1950	Water pump, for wells to 30 m deep, 100 mm submersible, with motor complete with accessories, 3 HP (stainless steel)		5,800.00
026 704-3000	Well, water pump submersible, 150 mm, 25 HP, 210 GPM, (cast iron)		11,000.00
026 704-3050	Well, water pump submersible, 150 mm, 25 HP, 210 GPM, (stainless steel), with motor and complete with accessories	↓	17,000.00
<b>026 800</b>	<b>FUEL DISTRIBUTION</b>		



## Division 02 : SITE WORK

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT
<b>026 804</b>	<b>GAS STATION PRODUCT LINE</b>		
026 804-0020	Primary containment pipe, fiberglass-reinforced, plastic pipe 4.5 m lengths, 80 mm diameter	LM	126.30
026 804-0060	Primary containment pipe, fiberglass-reinforced, plastic pipe 4.5 m lengths, 100 mm diameter	"	140.30
026 804-0130	Gas pipe fittings, elbow, 100 mm diameter	EA	17.00
026 804-0220	Gas pipe fittings, tee, 100 mm diameter		40.00
026 804-0250	Gas pipe fittings, flanged bell ends, 100 mm diameter		38.00
026 804-0280	Gas pipe fittings, sleeve couplings, 150 mm diameter		50.00
026 804-0310	Gas pipe fittings, 80 mm dia. coupling with 2 rubber rings		35.00
026 804-0340	Gas pipe fittings, reducer, 150 mm x 100 mm diameter	▼	80.00
<b>026 850</b>	<b>GAS DISTRIBUTION SYSTEM</b>		
<b>026 852</b>	<b>GAS SERVICE &amp; DISTRIBUTION:</b>		
026 852-0100	Gas piping, polyethylene, 232 kPa ( 16 bar), coils, 32 mm diameter, SDR 11	LM	2.04
026 852-0200	Gas piping, polyethylene, 232 kPa ( 16 bar), coils, 75 mm diameter, SDR 11		10.95
026 852-0550	Gas piping, black steel, schedule 40, seamless, 25mm diameter		16.67
026 852-0600	Gas piping, black steel, schedule 40, seamless, 50 mm diameter		31.67
026 852-0700	Gas piping, black steel, schedule 40, seamless, 100 mm diameter		80.00
026 852-8002	Gas piping, black steel, schedule 40, seamless, 150 mm diameter	▼	136.67
026 852-8008	Gas pipe fittings, elbow, weld joint, standard weight 100 mm diameter	EA	17.00
026 852-8102	Gas pipe fittings, elbow, weld joint, extra heavy weight 100 mm diameter	EA	72.00
<b>026 858</b>	<b>PIPING, VALVES, GAS DISTRIBUTION</b>		
026 858-0140	Gas piping valves, gas stops, with or without checks 32 mm size	EA	381.00
026 858-0200	Gas piping valves, gas stops, with or without checks 50 mm size (with handwheel)		763.00
026 858-0680	Gas piping valves, pressure regulator, iron and bronze 50 mm diameter		150.00
026 858-0740	Gas piping valves, pressure regulator, iron and bronze 100 mm diameter	▼	1,000.00
<b>027</b>	<b>SEWERAGE &amp; DRAINAGE</b>		
<b>027 100</b>	<b>SUBDRAINAGE SYSTEMS</b>		
<b>027 108</b>	<b>PIPING, SUBDRAINAGE, CONCRETE:</b>		
027 108-3020	Subdrainage piping, perforated reinforced concrete pipe, 300 mm diameter	LM	88.00
027 108-3100	Subdrainage piping, perforated reinforced concrete pipe, 470 mm diameter	LM	148.00
<b>027 110</b>	<b>PIPING, SUBDRAINAGE, CORRUGATED METAL:</b>		
027 110-2020	Subdrainage piping, corrugated aluminum, perforated, 150 mm diameter, 18 gauge	LM	56.10
027 110-2240	Subdrainage piping, corrugated aluminum, perforated, 300 mm diameter, 16 gauge		125.00
027 110-4000	Subdrainage piping, cast Iron, perforated, 150 mm diameter		365.00
027 110-4050	Subdrainage piping, corrugated steel, perforated, 300 mm diameter, 16 gauge		110.00
027 110-4100	Subdrainage piping, PVC, Class 5, perforated 160 mm diameter		50.00
027 110-4110	Subdrainage piping, PVC, Class 5, perforated 300 mm diameter	▼	194.63
<b>027 112</b>	<b>PIPING, SUBDRAINAGE, VITRIFIED CLAY:</b>		
027 112-3020	Subdrainage piping, vitrified clay perforated, 1.5 m length, 150 mm diameter	LM	55.20
027 112-3060	Subdrainage piping, vitrified clay perforated, 1.5 m length, 300 mm diameter	LM	159.25



## Division 02 : SITE WORK

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT
<b>027 150</b>	<b>SEWAGE SYSTEMS</b>		
<b>027 152</b>	<b>CATCH BASINS OR MANHOLES:</b>		
027 152-1600	Manhole frames & covers, C.I., 600 mm square, 227 kg	EA	660.00
027 152-1800	Manhole frames & covers, C.I., light traffic, 470 mm, diameter, 47 kg		415.00
027 152-2100	Manhole frames & covers, C.I., heavy traffic, 600 mm, diameter, 181 kg		615.00
027 152-2500	Manhole frames & covers, C.I., water tight, 600 mm, diameter, 160 kg	↓	530.00
<b>027 162</b>	<b>PIPING, DRAINAGE &amp; SEWAGE, CONCRETE:</b>		
027 162-1010	Sewer drainage, concrete pipe, non-reinforced, 300 mm diameter	LM	81.00
027 162-1080	Sewer drainage, concrete pipe, non-reinforced, 600 mm diameter		160.00
027 162-1090	Concrete reinforced pipe, size 300 mm diameter, with gaskets		82.00
027 162-1100	Concrete reinforced pipe, size 400 mm diameter, with gaskets		87.00
027 162-1110	Concrete reinforced pipe, size 500 mm diameter, with gaskets		145.00
027 162-1120	Concrete reinforced pipe, size 600 mm diameter, with gaskets		168.00
027 162-1125	Concrete reinforced pipe, size 700 mm diameter, with gaskets		268.80
027 162-1130	Concrete reinforced pipe, size 800 mm diameter, with gaskets		285.00
027 162-1140	Concrete reinforced pipe, size 900 mm diameter, with gaskets		345.00
027 162-1150	Concrete reinforced pipe, size 1000 mm diameter, with gaskets	↓	445.00
027 162-1160	Concrete reinforced pipe, size 1100 mm diameter, with gaskets	LM	640.00
027 162-1170	Concrete reinforced pipe, size 1200 mm diameter, with gaskets		575.00
027 162-2310	Concrete reinforced pipe, size 1300 mm diameter, with gaskets		863.00
027 162-2320	Concrete reinforced pipe, size 1400 mm diameter, with gaskets	↓	767.00
<b>027 164</b>	<b>PIPING, STORM DRAINAGE, CORRUGATED METAL:</b>		
027 164-2040	Sewer / drainage piping, corrugated metal, galvanized or aluminum, 6 mm lengths, 200 mm diameter, 16 ga.	LM	76.53
027 164-2140	Sewer / drainage piping, corrugated metal, galvanized or aluminum, 6 mm lengths, 600 mm diameter, 14 ga.	LM	265.85
<b>027 165</b>	<b>PIPING, STORM DRAINAGE, FIBERGLASS</b>		
027 165-0100	Sewer/drainage piping, fiberglass reinforced polyester resin, 3700 mm diameter	LM	11,596.00
027 165-0200	Sewer/drainage piping, fiberglass reinforced polyester resin, 3000 mm diameter	LM	8,615.00
027 165-0300	Sewer/drainage piping, fiberglass reinforced polyester resin, 2000 mm diameter	LM	3,358.00
<b>027 166</b>	<b>PIPING, DRAINAGE &amp; SEWAGE, PLASTIC:</b>		
027 166-1000	Sewer piping, plastic reinforced, general strength 32 mm diameter (PVC CLASS 3)	LM	1.63
027 166-1010	Sewer piping, plastic reinforced, general strength 40 mm diameter (PVC CLASS 3)		2.17
027 166-1020	Sewer piping, plastic reinforced, general strength 50 mm diameter (PVC CLASS 3)		2.61
027 166-1040	Sewer piping, plastic reinforced, general strength 63 mm diameter (PVC CLASS 3)		3.51
027 166-5000	Sewer piping, plastic reinforced, high strength 160 mm diameter (PVC CLASS 5)	↓	47.54
027 166-9100	Plastic piping fittings; elbow 32 mm diameter (PVC)	EA	2.65
027 166-9140	Plastic piping fittings; elbow 63 mm diameter (PVC)		9.75
027 166-9610	Plastic piping fittings; Wyes and tees; 32 mm diameter (PVC)		3.25
027 166-9650	Plastic piping fittings; Wyes and tees; 63 mm diameter (PVC)	↓	9.75
<b>027 168</b>	<b>PIPING, DRAINAGE &amp; SEWAGE, POLYVINYL CHLORIDE:</b>		



## Division 02 : SITE WORK

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT
027 168-2000	Sewer /Drainage piping,PVC, class 3, 110 mm diam.	LM	9.46
027 168-2040	Sewer /Drainage piping,PVC, class 3, 160 mm diam.		19.84
027 168-2080	Sewer /Drainage piping,PVC, class 3, 225 mm diam.		40.00
027 168-2160	Sewer /Drainage piping,PVC, class 3, 315 mm diam.	↓	76.32
027 168-3080	PVC piping fittings, bend 87 1/2° 160 mm diameter	EA	29.60
027 168-3160	PVC piping fittings, branch 87 1/2°, 160 x 160 mm		60.75
027 168-3240	PVC piping fittings, branch 47°, 160 x 160 mm		42.60
027 168-3250	PVC fittings, bends or elbow 150 mm diameter		19.15
027 168-3260	PVC fittings, tee 150 mm diameter	↓	64.25
027 168-3270	PVC fittings, "wye" 150 mm diameter	EA	42.60
<b>027 172</b>	<b>PIPING, DRAINAGE &amp; SEWAGE, VITRIFIED CLAY C700</b>		
027 172-5040	Sewer/drainage piping,vitrified clay, extra strength, compression joints, 200 mm diameter x 1.5 m long	LM	105.60
027 172-5080	Sewer/drainage piping,vitrified clay, extra strength, compression joints, 300 mm diameter x 1.8 m long		269.50
027 172-5140	Sewer/drainage piping,vitrified clay, extra strength, compression joints, 600 mm diameter x 2.1 m long	↓	1,018.60
027 172-8026	Vitrified clay fittings,bend, plain joint, 200 mm diameter, 90 deg	EA	250.80
027 172-8200	Vitrified clay fittings,-wye & tee, plain joint, 100 mm diameter	EA	82.50
027 172-8216	Vitrified clay fittings, wye & tee, plain joint, 200 mm diameter	EA	264.00
<b>027 174</b>	<b>SEWAGE PUMPING STATIONS:</b>		
027 174-0020	Sewage pumping station, prefabricated steel 170 GPM	EA	118,193.00
027 174-0200	Sewage pumping station, prefabricated steel 850 GPM	EA	217,770.00
<b>027 176</b>	<b>SEWAGE TREATMENT:</b>		
027 176-0300	Sewage treatment,steel package, blown air aeration plant, 57 CUM/day	EA	285,232.50
027 176-0600	Sewage treatment,steel package, blown air aeration plant, 378 CUM/day	EA	600,000.00
<b>027 350</b>	<b>WASTE WATER SYSTEM</b>		
<b>027 354</b>	<b>WASTEWATER TREATMENT SYSTEM:</b>		
027 354-0050	Wastewater treatment system, fiberglass, 4 CUM / capacity	EA	36,697.50
027 354-0100	Wastewater treatment system, fiberglass, 5.5 CUM / capacity	EA	44,971.50
<b>027 400</b>	<b>SEPTIC SYSTEMS</b>		
<b>027 404</b>	<b>SEPTIC TANKS:</b>		
027 404-0200	Septic tanks, precast concrete 20 CUM	EA	16,758.00
027 404-0600	Septic tank, high density polyethylene, 4 cum	EA	12,600.00
027 404-0700	Septic tank,high density polyethylene, 5.5 cum	EA	16,800.00
<b>028</b>	<b>SITE IMPROVEMENTS</b>		
<b>028 100</b>	<b>IRRIGATION SYSTEMS</b>		
<b>028 104</b>	<b>SPRINKLER IRRIGATION SYSTEM:</b>		
028 104-2000	Sprinkler, pressure compensating bubbler, upto 2 GPM	EA	7.00
028 104-2010	Sprinkler, part/full circle pop-up impact sprinkler		75.00
028 104-2020	Sprinkler, 4" part/full circle including nozzle		10.00
028 104-2030	Sprinkler, 1" electric valve, 24 VAC brass		500.00
028 104-2040	Sprinkler, 1 1/4" Electric valve, 24 VAC brass		950.00
028 104-2050	Sprinkler, 1 1/2" Electric valve, 24 VAC brass		1,100.00
028 104-2060	Sprinkler, 2" Electric valve, 24 VAC brass		1,200.00



## Division 02 : SITE WORK

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT
028 104-2070	Sprinkler, 1" Electric remote control scrubber valve		400.00
028 104-2080	Sprinkler, 1 1/2" Electric remote control scrubber valve		600.00
028 104-2090	Sprinkler, 2" Electric remote control scrubber valve		700.00
028 104-2100	Sprinkler, 1" Electric valve, 24 VAC		130.00
028 104-2110	Sprinkler, 1 1/2" Electric valve, 24 VAC		200.00
028 104-2120	Sprinkler, 2" Electric valve, 24 VAC with filter		310.00
028 104-2130	Sprinkler, valve with purple locking rubber cover (non potable uses)		250.00
028 104-2140	Sprinkler, valve key		120.00
028 104-2150	Sprinkler, automatic moisture sensor, solid state with stainless steel probes		600.00
028 104-2160	Sprinkler system, 12 stations, four program controller, 117 VAC, 60 Hz		1,050.00
028 104-2170	Sprinkler system, 16 stations, four program controller, 117 VAC, 60 Hz		1,500.00
028 104-2180	Sprinkler system, 24 stations, four program controller, 117 VAC, 60 Hz		5,200.00
028 104-2000	Sprinkler heads, pop-up spray, head & nozzle, heavy duty brass		50.00
028 104-3000	Sprinkler heads, riser mounted spray, low/medium volume, plastic / brass		4.00
028 104-4000	Sprinkler heads, pop-up impact sprinkler, body & case, plastic low/medium volume		42.00
028 104-5000	Sprinkler heads, quick coupling valve and key, brass, thread type	▼	97.00
028 104-5400	Sprinkler heads, pop-up gear drive sprinkler, nozzle & case plastic, medium volume	EA	30.00
028 104-8000	Sprinkler heads, riser mounted impact sprinkler, body, part or full circle, plastic, low/medium volume		42.00
028 104-9000	Sprinkler system control panel 6 zone		310.00
028 104-9200	Sprinkler system control panel 24 zone	▼	6,825.00
<b>028 200</b>	<b>FOUNTAINS</b>		
<b>028 204</b>	<b>FOUNTAINS:</b>		
028 204-0300	Fountain, pool & light not included, 0.6 m diameter spray ring	EA	1,207.00
028 204-0400	Fountain, pool & light not included, 1.2 m diameter spray ring	EA	2,467.50
<b>028 300</b>	<b>FENCES &amp; GATES</b>		
<b>028 308</b>	<b>FENCE, CHAIN LINK INDUSTRIAL:</b>		
028 308-0200	Fence, chain link industrial, 1.8 m high, 9 ga. wire, galvanized steel ( 50 mm mesh)	LM	58.15
028 308-0300	Fence, chain link industrial, 1.8 m high, 6 ga. wire, aluminized steel		58.15
028 308-0800	Fence, chain link industrial, 1.8 m high no barbed wire, 50 mm posts @ 3 m O.C., 40 mm top rail, braces, posts and 9 to 6 ga. wire, galvanized steel or aluminum steel		63.97
028 308-0900	Fence, chain link industrial, 1.8 m high, 6 ga. wire, aluminized steel		
028 308-0950	Barbed wire 3 strands	▼	1.91
028 308-1000	Fence post 50 mm galvanized steel, 3000 mm long	EA	202.50
028 308-1050	Fence post 50 mm aluminized steel		139.00
028 308-1100	Fence, corner post, 75 mm diam., galvanized steel, 3000 mm long		132.40
028 308-1300	Fence galvanized or aluminum braces		42.00
028 308-1400	Gate for 1.8 m high fence, 40 mm frame, 900 mm wide, galvanized steel		916.67
028 308-1500	Gate for 1.8 m high fence, 40 mm frame, 900 mm wide, PVC coated	▼	2,200.00
028 308-2000	Fence, chainlink, industrial, 1.5 mm high including posts @ 3 m. o.c. 40 mm top rail, braces & 9 ga. Wire galvanized or aluminum steel	LM	58.15
028 308-2400	Fence gate, 1.2 m wide, 1.5 m high, 50 mm frame, galvanized steel	EA	1,100.00



## Division 02 : SITE WORK

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT
028 308-2500	Fence gate, 1.2 m wide, 1.5 m high, 50 mm frame, aluminized steel		
028 308-2700	Fence gate motor operator only, no wiring, for swinging gate 4.5 m wide		6,750.00
028 308-2800	Fence gate motor operator only, no wiring for swinging gate 9 m wide		13,500.00
028 308-2900	Fence swinging gate, 3 m high, 14m wide motor operated, no wiring		21,000.00
028 308-5010	Fence, double swing gates, including posts & hardware 1.5 m high, 3.6 m opening,galvanized steel		2,125.00
028 308-5020	Fence, double swing gates, including posts & hardware 1.5 m high, 6 m opening,galvanized steel		3,541.00
028 308-5060	Fence, double swing gates, including pots & hardware 1.8 m high, 3.6 m opening		2,550.00
028 308-5120	Fence, double swing gates, including posts & hardware 3.6 m high, 3.6 m opening, galvanized steel		5,100.00
<b>028 312</b>	<b>FENCE, CHAIN LINK RESIDENTIAL:</b>		
028 312-0620	Fence chain link residential,steel,vinyl covered, 9 ga wire	SQM	54.11
028 312-0820	Fence gate,vinyl covered steel,1.2 m wide,1.8 m high, 35 mm frame	EA	3,675.00
028 312-1040	Fence aluminized steel,tennis court, 9 ga. wire,vinyl covered	SQM	15.00
<b>028 320</b>	<b>FENCE, MISC. METAL:</b>		
028 320-0300	Fence, chicken wire, galvanized steel, 12 ga., 50 mm x 100 mm, mesh	SQM	13.00
<b>028 324</b>	<b>FENCE, WOOD:</b>		
028 324-1200	Fencewood, stockade, cedar, treated wood rails, 1.8 mm high	LM	72.00
028 324-1250	Fencewood, gate,1m wide, 1.8 m high	LM	165.00
<b>028 400</b>	<b>WALK/ROAD/PARKING APPURTENANTS</b>		
<b>028 404</b>	<b>GUIDE RAIL:</b>		
028 404-1500	Guiderail, precast concrete posts, individual, 2 m triangular or square	EA	331.00
<b>028 408</b>	<b>PARKING BARRIERS:</b>		
028 408-1000	Wheel stops,precast concrete,including dowels,150 mm x 250 mm x 1.8 m long	EA	120.00
028 408-1200	Wheel stops,thermoplastic 150mm x 250mm x 1.8m long	EA	172.00
<b>028 412</b>	<b>SIGNS:</b>		
028 412-0010	Guide and directional signs, 600 mm x 600 mm,2mm aluminum reflectorized	EA	750.00
028 412-1800	Highway road signs, aluminum, over 2 SQM, reflectorized	EA	4,400.00
028 412-2200	Highway,suspended over road, 7.4 m2 min. reflectorized	SQM	293,000.00
<b>028 416</b>	<b>STEPS:</b>		
028 416-0300	Bluestone steps treads, 300 mm x 50 mm or 300 mm x 40 mm	LM	180.00
<b>028 424</b>	<b>TRAFFIC SIGNALS:</b>		
028 424-0100	Traffic signals, pedestrian intersection, 3 lights set,no post	TOTAL	1,349.00
028 424-0600	Traffic signal flashing head light	EA	875.00
028 424-0800	Traffic controller for 16 traffic lights at any intersection	EA	33,520.00
<b>028 600</b>	<b>PALYFIELD EQUIPMENT</b>		
<b>028 604</b>	<b>BACKSTOPS:</b>		
028 604-0300	Backstop for basketball, steel and single pole	SET	4,290.00
028 604-0400	Handball goals & Nets	SET	1,820.00
028 604-0900	Volley Ball Post and Net	SET	515.00
<b>028 608</b>	<b>GOAL POSTS:</b>		
028 608-0100	Goal posts steel, soccer, regulation	PAIR	4,860.00
<b>028 612</b>	<b>PLAYGROUND EQUIPMENT:</b>		



## Division 02 : SITE WORK

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT
028 612-0400	Playground Equipment,Horizontal monkey ladder, 4.3 m long	EA	6,693.75
028 612-0590	Playground Equipment,Parallel bars, 3 m long		1,906.00
028 612-1900	Playground Equipment,slides,stainless steel bed, 3.6 m long,1.8 m high		18,375.00
028 612-2000	Playground Equipment,slides,stainless steel bed, 6 m long, 3 m high		3,163.00
028 612-2200	Playground Equipment,swings, 2.4 m high,plain seats, 4 seats		9,518.00
028 612-2500	Playground Equipment,swings,3.6m high,plain seats, 4 seats	▼	10,106.00
<b>028 620</b>	<b>PLATFORM PADDLE TENNIS COURT:</b>		
028 620-0100	Platform paddle tennis court . Aluminum slate deckwith aluminum frame	EA	67,984.35
<b>028 700</b>	<b>SITE/STREET FURNISHINGS</b>		
<b>028 704</b>	<b>BENCHES:</b>		
028 704-0510	Benches park,steel pedestals with backs, 50 mm x 75 mm wood rails, 2.4 m long	EA	157.50
028 704-0520	Benches park, precast concrete with treated wood, 250 mm x 770 mm x 2 m long		1,365.00
028 704-0610	Benches park,aluminum pedestals,with backs,aluminum slats, 4.6 m long	▼	1,420.65
<b>028 708</b>	<b>BLEACHERS:</b>		
028 708-0050	Bleachers outdoor, portable, 3 to 5 tiers, 20 m long	EA	2,100.00
028 708-0500	Bleachers outdoor, permanent grandstands,wood seat,steel frame, 600 mm row, 3 to 5 tiers,average 2" X 8", 1 m Long	EA	225.75
<b>028 716</b>	<b>PLANTERS:</b>		
028 716-0050	Planters conc.,sandblasted,precast,1.2 m dia., 600 mm high, 150 mm thickness	EA	994.35
028 716-0100	Planters conc.,sandblasted, precast,1.5 m dia., 600 mm high, 150 mm thickness		1,249.00
028 716-0400	Planters conc.,sandblasted, fiberglass,circular,1.5 m dia., 600 mm high		1,033.20
028 716-0900	Planter /bench fiberglass, 1.8 m square, 900 mm high	▼	2,317.35
<b>028 720</b>	<b>TRASH CLOSURE:</b>		
028 720-0300	Trash closure, wood, 3 m wide, 1.8 m high , 3 m long	EA	2,625.00
028 720-0400	Trash closure, 1.2 m x 1.2 m x 1.2 m bush hammered precast concrete	EA	1,837.50
<b>028 724</b>	<b>TRASH RECEPTACLE:</b>		
028 724-0100	Trash receptacle, fiberglass, 600 mm square, 760 mm high	EA	472.50
<b>029</b>	<b>LANDSCAPING</b>		
<b>029 100</b>	<b>SHRUB/TREE TRANSPLANTING</b>		
<b>029 104</b>	<b>TREE GUYING:</b>		
029 104-1300	Tree guying arrowhead anchor, cable, turnbuckles and wrap 150 mm caliper, 150 mm anchors	EA	26.25
<b>029 200</b>	<b>SOIL PREPARATION</b>		
029 204-4100	Fertilizer (NPK)	KG	1.50
029 204-4400	Manure	KG	0.45
029 204-6000	Topsoil	CUM	28.00
<b>029 300</b>	<b>LAWNS &amp; GRASSES</b>		
<b>029 304</b>	<b>SEEDING:</b>		
029 304-0100	Seeding	KG	25.00
<b>029 316</b>	<b>SODDING:</b>		
029 316-0050	Sodding, 250 mm deep, bluegrass sod, level ground	SQM	7.00

## Division 02 : SITE WORK

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT
<b>029 500</b>	<b>TREES/PLANTS/GROUND COVER</b>		
<b>029 504</b>	<b>GROUND COVER:</b>		
029 504-0200	Hay 25 mm deep	SQM	25.00
029 504-0400	Humus peat 25 mm deep		7.00
029 504-0800	Peatmoss 25 mm deep		4.25
029 504-1000	Polyethylene film 0.15 mm		2.50
029 504-1050	Filter fabric weed barrier	↓	5.00
029 504-1200	Stone mulch,ceramic chips	CUM	550.00
029 504-1300	Stone mulch,granite chips		570.00
029 504-1400	Stone mulch,marble chips		755.00
029 504-1500	Stone mulch,pea gravel	↓	60.00
<b>029 516</b>	<b>MULCH:</b>		
029 516-0100	Mulch aged barks, 75 mm deep	SQM	27.50
<b>029 524</b>	<b>PLANTING SHRUBS:</b>		
029 524-0200	Shrubs, azalea, 380 mm to 460 mm	EA	51.70
029 524-0300	Shrubs, barberry, 230 mm to 300 mm	EA	66.00
<b>029 528</b>	<b>PLANTING SHRUBS &amp; TREES :</b>		
029 528-0100	Shrubs and trees, evergreen, balled and burlapped, 1.2 m to 1.5 m high	EA	110.00
029 528-0300	Shrubs and trees, evergreen, balled and burlapped, 2.4 to 2.5 m high		275.00
029 528-0600	Shrubs and trees, evergreen, balled and burlapped, upto 0.6 m high		77.00
029 528-0740	Shrubs and trees, evergreen, balled and burlapped, pine white, 1.2 m to 1.5 m		110.00
029 528-0741	Shrubs and trees, evergreen, balled and burlapped, spruce, blue, 0.5 m to 0.6 m	↓	77.00
<b>029 536</b>	<b>PLANTING TREES:</b>		
029 536-0100	Trees decidous, balled & burlapped,ash 50 mm calipper	EA	385.00
029 536-0200	Trees decidous, balled & burlapped,beech, 1.5 m to 1.8 m high		275.00
029 536-0600	Trees decidous, balled & burlapped,dogwood 1.2 m to 1.8 m high		275.00
029 536-1100	Trees decidous, balled & burlapped,honeylocust, 3 m to 3.6m, 38 mm caliper		990.00
029 536-1400	Trees decidous, balled & burlapped,linden, 2.4 m to 3 m, 25 mm caliper	↓	990.00
029 536-1600	Trees decidous, balled & burlapped,maple, red, 2.4 m to 3 m, 38 mm caliper	EA	990.00
029 536-2700	Trees decidous, balled & burlapped, tulip, 1.5 m to 2.4 m	EA	275.00



A decorative geometric pattern, resembling a complex tessellation of squares and stars, is located in the top right corner of the page. The pattern is rendered in a light gray color against a white background.

# Division 3

## Concrete



# MAKE A CONCRETE BUILDING CHOICE



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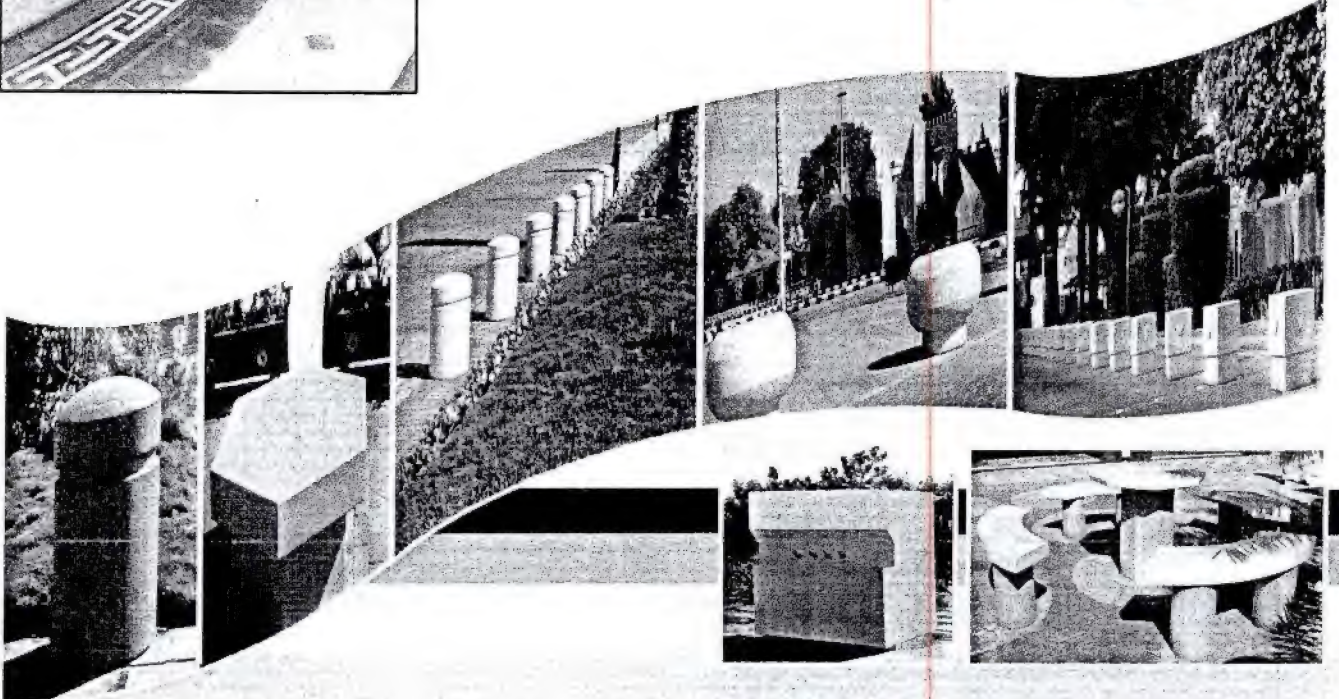
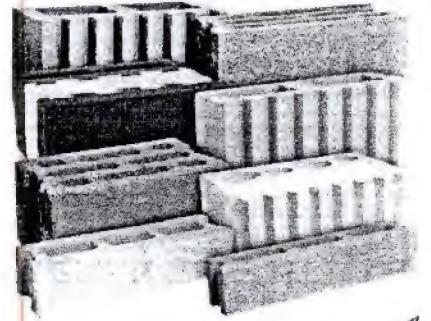
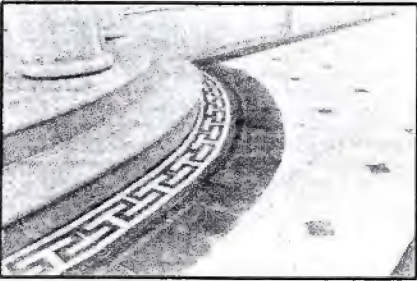
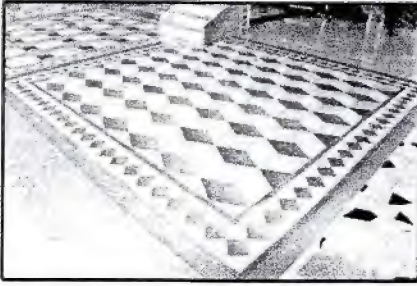
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[precast@rancogroup.com.sa](mailto:precast@rancogroup.com.sa)

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[WWW.arabiantiles.com](http://WWW.arabiantiles.com)

[artic@shaheer.net.sa](mailto:artic@shaheer.net.sa)



## DIVISION 3 : CONCRETE

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
<b>031</b>	<b>CONCRETE FORMWORK</b>		
<b>031 100</b>	<b>STRUCT C.I.P. FORMWORK</b>		
<b>031 110</b>	<b>ACCESSORIES,ANCHOR BOLTS <i>Incl. nut and washer</i></b>		
031 110-0050	Anchor bolt,including nut & washer,12 mm Diameter, 240 mm	EA	4.60
031 110-0300	Anchor bolt,including nut & washer,16 mm Diameter, 310 mm Long		6.80
031 110-0450	Anchor bolt,including nut & washer, 20 mm Diameter, 270 mm Long		13.50
031 110-0600	Anchor bolt,including nut & washer, 24 mm Diameter, 235 mm Long	↓	18.00
<b>031 111</b>	<b>ANCHOR BOLTS <i>with hex nuts and washers,zinc plated</i></b>		
031 111-0800	Anchor botl with hex nut & washer,zinc plated,M8, 8 mm Diameter x 100 mm Long	EA	2.50
031 111-1670	Anchor botl with hex nut & washer,zinc plated,M16, 16 mm Diameter x 152 mm Long		6.10
031 111-2070	Anchor botl with hex nut & washer,zinc plated,M20, 20 mm Diameter x 335 mm Long		14.50
031 111-2450	Anchor botl with hex nut & washer,zinc plated,M24, 24 mm Diameter x 320 mm Long	↓	21.00
<b>031 112</b>	<b>ACCESSORIES,CHAMFER STRIPS:</b>		
031 112-2000	Chamfer strip,Polyvinyl chloride,15 mm	LM	0.70
031 112-2200	Chamfer strip,Polyvinyl chloride, 20 mm		0.90
031 112-2400	Chamfer strip,Polyvinyl chloride, 25 mm		1.10
031 112-2800	Chamfer strip,Polyvinyl chloride, 30 mm		7.55
031 112-5200	Chamfer strip,Steel 20 mm wide		15.50
031 112-5400	Chamfer strip,Steel 25 mm wide	↓	12.75
<b>031 114</b>	<b>ACCESSORIES,COLUMN FORM:</b>		
031 114-1000	Column clamps,adjustable to 600 mm x 600 mm	SET	77.00
031 114-1300	Column clamps,adjustable to 760 mm x 760 mm		84.00
031 114-2300	Column clamps,adjustable to 1200 mm x 1200 mm		126.50
031 114-3300	Column clamps,adjustable to 1500 mm x 1500 mm	↓	149.50
<b>031 116</b>	<b>ACCESSORIES,DOVETAIL ANCHOR SYSTEM:</b>		
031 116-0500	Devetail,Anchor slot,filled, 24 ga.	LM	11.50
031 116-0600	Devetail,Anchor slot,Galvanized, 20 ga.	"	18.40
031 116-1200	Devetail,Brick anchor,galv., 89 mm Long, 16 ga.	100 PCS	92.00
031 116-2100	Devetail,Anchor Cavity wall,galv.,127mm Long, 12 ga.		120.00
031 116-3100	Devetail,Furring anchors,corr.,galv., 38 mm Long, 12 ga.		74.75
031 116-6100	Devetail,Stone anchors, 89 mm Long, galv., 6 mm x 25 mm wide	↓	245.00
<b>031 122</b>	<b>ACCESSORIES,INSERTS:</b>		
031 122-2100	Inserts,Continuous slotted, 76 mm Long 12 ga.	EA	9.50
031 122-2200	Inserts,Continuous slotted, 300 mm Long 8 ga.		30.75
031 122-2300	Inserts,Continuous slotted, 914 mm Long 8 ga.		67.20
031 122-2350	Inserts,Continuous slotted, 1.5 m Long 8 ga.	↓	111.80
031 122-7100	Inserts,Threaded cast, 6 mm dia. bolt	LM	1.80
031 122-7350	Inserts,Threaded cast, 20 mm dia. bolt	"	12.65
<b>031 125</b>	<b>SLAB TEXTURE STAMPING:</b>		
031 125-0010	Hardner- Metallic	KG	1.20
031 125-0020	Hardner- Non Metallic	"	1.40
031 125-0030	Hardner- Solution type	LTR	2.80
031 125-0050	Release Agent	LTR	1.20
031 125-0060	Sealer	LTR	17.55
031 125-0070	Accessories, Texture Shoes	EA	472.50
031 125-0080	Accessories, Grouting Tool, 3/8" x 8"	EA	157.50



## DIVISION 3 : CONCRETE

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
031 125-0090	Accessories, Setting Tool, 10" x 10" Polyurethane Coated Temper		493.50
031 125-0100	Accessories, Texture Rollers, 10" x dia.		504.00
031 125-0110	Accessories, Joint Touch-Up Roller, 3/16"		189.00
031 125-0120	Accessories, Alum. Chisel, 8"		275.00
031 125-0130	Accessories, Edger Groover		120.00
031 125-0140	Accessories, Trowel with adj. tooth bracket, 30" x 5"		656.25
031 125-0150	Accessories, Alum. Bull Floats, 12" x 7-1/4"		656.25
031 125-0160	Accessories, Stainless Steel Edger, Rivet Free, 8"		57.75
031 125-0060	Accessories, Steel Trowel, 14" x 4" x 5-1/2" shank	↓	183.75
<b>031 126</b>	<b>ACCESSORIES,SLEEVES AND CHASES:</b>		
031 126-0010	Sleeves & Chases,Plastic type, 230 mm Long, 50 mm dia.	EA	3.45
031 126-0150	Sleeves & Chases,Plastic type, 230 mm Long, 100 mm dia.	"	5.75
031 126-0250	Sleeves & Chases,Plastic type, 230 mm Long, 300 mm dia	EA	15.50
<b>031 128</b>	<b>ACCESSORIES,SNAP TIES,FLAT WASHER:</b>		
031 128-0250	Snap ties,flat washer 1.3 ton to 400 mm	100 PCS	205.11
031 128-0650	Snap ties,flat washer 1.3 ton with plastic cone,to 400 mm	100 PCS	189.50
031 128-1000	Snap ties,flat washer 2.2 ton to 200 mm		279.70
031 128-1200	Snap ties,flat washer 2.2 ton to 400 mm		346.84
031 128-1650	Snap ties,flat washer 2.2 ton with plastic cone,to 400 mm	↓	354.13
<b>031 130</b>	<b>ACCESSORIES,WALL AND FOUNDATION:</b>		
031 130-2000	Footings,form braces,soild steel,adjustable	EA	84.50
031 130-2050	Spreaders for footer,adjustable	"	16.90
031 130-3000	Form oil,coverage varies greatly, average	LTR.	1.17
031 130-4000	Nail stakes,19 mm diameter, 450 mm long	EA	7.50
031 130-4250	Nail stakes,19 mm diameter, 900 mm long	"	12.68
<b>031 132</b>	<b>EXPANSION JOINT</b>		
031 132-0010	Expansion Joint,Keyed cold joint, 24 ga.,incl.stakes, 90 mm high	LM	9.20
031 132-0150	Expansion Joint,Keyed cold joint, 24 ga.,incl.stakes, 190 mm high		13.97
031 132-0350	Expansion Joint,Poured asphalt, plain, 25 mm x 50 mm		10.85
031 132-0550	Expansion Joint,Neoprene,liquid,cold applied, 25 mm x 50 mm		58.51
031 132-0750	Expansion Joint,Polyurethane, 1 part, 13 mm x 25 mm		18.15
031 132-1150	Expansion Joint,Rubberized hot applied,fuel resistant, 25 mm x 50 mm		10.67
031 132-2000	Expansion Joint,Premolded,bituminous fiber, 13 mm x 150 mm		1.32
031 132-2250	Expansion Joint,Cork with resin binder, 13 mm x 150 mm		9.80
031 132-2550	Expansion Joint,Neoprene sponge,closed cell, 25 mm x 300 mm		49.50
031 132-2750	Expansion Joint,Polyethylene foam, 13 mm x 150 mm		39.60
031 132-3000	Expansion Joint,Polyethylene backer rod, 10 mm to 25 mm diameter		0.70
031 132-3100	Expansion Joint,Polyethylene backer rod, 25 mm dia. (1")		1.10
031 132-3800	Expansion Joint,Polyurethane foam,regular,closed cell, 25 mm x 300 mm	↓	23.98
<b>031 136</b>	<b>FORMS MATERIAL:</b>		
031 136-0100	Shuttering plywood, 12 mm thick, 1220 mm x 2440 mm	SHEETS	75.00
031 136-0120	Shuttering plywood, 15 mm thick, 1220 mm x 2440 mm		95.00
031 136-0140	Shuttering plywood, 18 mm thick, 1220 mm x 2440 mm		125.00
031 136-0150	Ordinary plywood, 9 mm thick, 1220 mm x 2440 mm		47.00
031 136-0160	Ordinary plywood, 12 mm thick, 1220 mm x 2440 mm		63.00
031 136-0160	Ordinary plywood, 15 mm thick, 1220 mm x 2440 mm		78.00
031 136-0170	Ordinary plywood, 18 mm thick, 1220 mm x 2440 mm	↓	94.00
031 136-0900	Lumber size: 50 mm x 100 mm x 4000 mm	CUM	870.00
031 136-0910	Lumber size: 200 mm x 200 mm x 4000 mm		870.00
031 136-0920	Lumber size: 25 mm x 150 mm x 4000 mm	↓	870.00



## DIVISION 3 : CONCRETE

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
031 136-2000	Steel forms, Beam and Girder, spandrel, 300 mm wide	SQM	80.82
031 136-2010	For steel forms, Spandrel, 457mm wide		70.83
031 136-2020	Steel forms, Spandrel, 600 mm wide	↓	72.59
<b>031 142</b>	<b>FORMS IN PLACE, COLUMNS:</b>		
031 142-0500	Column form, Round fiberglass, 300 mm dia.	LM	412.50
031 142-0650	Column form, Round fiberglass, 600 mm dia.	LM	725.00
031 142-0800	Column form, Round fiberglass, 760 mm dia.	LM	1,175.00
031 142-0850	Column form, Round fiberglass, 910 mm dia.		1,633.33
031 142-1900	Column form, Round fiber tube, 900 mm dia.		1,600.00
031 142-1950	Column form, Round fiber tube, 1 m dia.		1,625.00
031 142-2000	Column form, Round fiber tube, 1.2 m dia.		1,900.00
031 142-3050	Column form, Round, steel, regular duty, 400 mm dia.		1,137.50
031 142-3150	Column form, Round Steel, Heavy duty, 600 mm dia.		1,938.00
031 142-3250	Column form, Round Steel, Heavy duty, 910 mm dia.		2,915.00
031 142-3300	Column form, Round Steel, Heavy duty, 1.2 m dia.	↓	3,846.00
031 142-7600	Column form, Steel framed plywood 300 mm x 300 mm	SQM	4,471.00
031 142-7650	Column form, Steel framed plywood 910 mm x 910 mm	..	2,788.00
<b>031 150</b>	<b>FORMS IN PLACE, ELEVATED SLABS:</b>		
031 150-1000	Forms, Flat plate to 4.6 m high	SQM	410.55
031 150-3500	Forms, Floor slab, 500 mm metal pans		184.00
031 150-3700	Forms, Floor slab, 760 mm metal pans		184.00
031 150-4000	Forms, Floor slab, 480 mm metal domes	↓	117.30
031 150-4500	Forms, Floor slab, 760 mm fiberglass domes height 200 mm	100 PCS	172.50
031 150-4550	Forms, Floor slab, 760 mm fiberglass domes height 250 mm		184.00
031 150-4600	Forms, Floor slab, 760 mm fiberglass domes height 300 mm		189.75
031 150-4650	Forms, Floor slab, 760 mm fiberglass domes height 350 mm	↓	195.50
<b>031 182</b>	<b>FORMS , WALLS:</b>		
031 182-2000	Job built plyform wall forms, to 2.4 m high	SQM	690.00
031 182-3510	Polystyrene(expanded) wall forms, 16 kg/m3, 50 mm thickness		17.50
031 182-3520	Polystyrene(expanded) wall forms, 20 kg/m3, 50 mm thickness		17.50
031 182-3530	Polystyrene(expanded) wall forms, 24 kg/m3, 50 mm thickness	↓	17.50
031 182-6200	Liners for forms, 19 mm deep, average	LM	32.50
031 182-6500	Liners for forms, 10 mm x 10 mm deep, average	"	26.00
031 182-7800	Wall form, Modular prefabricated plywood, 2.4 m high	SQM	460.00
031 182-8000	Modular prefabricated plywood, 4.2 m high		460.00
031 182-8060	Modular prefabricated plywood, more than 4.2 m high		460.00
031 182-9000	Wall form, Steel framed plywood, 2.4 m high		1,200.00
031 182-9200	Wall form, Steel framed plywood, 4.2 m high		1,200.00
031 182-9400	Wall form, Steel framed plywood, over 4.2 m to 6 m high	↓	1,200.00
<b>031 196</b>	<b>SLIPFORMS:</b>		
031 192-1000	Slipforms Buildings	SQM	13.85
<b>031 198</b>	<b>WATER STOP:</b>		
031 198-0010	PVC Water Stop, 150 x 10 mm, Centerfix	LM	15.00
031 198-0500	PVC Water Stop, 230 x 10 mm, Centerfix		16.00
031 198-0850	PVC Water Stop, 300 x 10 mm, Centerfix		17.00
031 198-1000	PVC Water Stop, 200 mm, Rearfix		21.50
031 198-1250	PVC Water Stop, 250 mm, Rearfix	↓	25.00

## 032 CONCRETE REINFORCEMENT

### 032 100 REINFORCING STEEL:



## DIVISION 3 : CONCRETE

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
<b>032 102</b>	<b>ACCESSORIES:</b>		
032 102-0020	Wheel spacer 25 mm	EA	0.10
032 102-0030	Wheel spacer 50 mm		0.26
032 102-0040	Wheel spacer 75mm	↓	0.75
032 102-0060	USS Spacer 20 mm	EA	0.07
032 102-0090	USS Spacer 50 mm		0.16
032 102-0100	Chair Spacer 25 mm		0.10
032 102-0110	Chair Spacer 50mm		0.16
032 102-0120	FD Spacer 75 mm	↓	0.55
032 102-0130	Tie wire, 16 ga. annealed steel	MET.TON	2,800.00
<b>032 105</b>	<b>REINFORCING:</b>		
032 105-0100	Reinforcing Steel, Grade 40, 6 mm dia.	MET.TON	2,433.00
032 105-0140	Reinforcing Steel, Grade 40, 16 mm dia, thru 32 mm		2,180.00
032 105-0190	Reinforcing Steel, Grade 60, 16 mm dia, thru 32 mm		2,185.00
032 105-0200	Reinforcing Steel, Grade 60, 36 mm dia.		2,197.00
032 105-0300	Reinforcing Steel, Grade 60, 40 mm dia		2,450.00
032 105-0400	Reinforcement, grade 60, spirals 8 mm dia., 3500 mm wide		2,350.00
032 105-0450	Reinforcement, grade 60, spirals 10 mm dia., 3500mm wide		2,300.00
032 105-0500	Reinforcement, grade 40, spirals 8 mm dia., 3500 mm wide		2,350.00
032 105-0550	Reinforcement, grade 40, spirals 10 mm dia., 3500 mm wide	↓	2,258.00
<b>032 200</b>	<b>WELDED WIRE FABRIC:</b>		
<b>032 207</b>	<b>WELDED WIRE FABRIC:</b>		
032 207-0100	Welded Wire Fabric Sheets, 100 mm x 100 mm x (10x10) mm, 11.78 Kg/m2	SQM	22.74
032 207-0150	Welded Wire Fabric Sheets, 100 mm x 200 mm x (12x8) mm, 10.21 Kg/m2		17.64
032 207-0200	Welded Wire Fabric Sheets, 100 mm x 200 mm x (10x8) mm, 7.68 Kg/m2		12.80
032 207-0220	Welded Wire Fabric Sheets, 100 mm x 100 mm x (8x8) mm, 7.54 Kg/m2		14.55
032 207-0300	Welded Wire Fabric Sheets, 200 mm x 200 mm x (10x10) mm, 6.30 kg/m2		14.50
032 207-0400	Welded Wire Fabric Sheets, 100 mm x 100 mm x (7x7) mm, 5.77 Kg/m2		10.60
032 207-0410	Welded Wire Fabric Sheets, 150 mm x 150 mm x (8x8) mm, 5.18 Kg/m2		11.30
032 207-0420	Welded Wire Fabric Sheets, 100 mm x 300 mm x (8x8) mm, 5.30 Kg/m2		11.30
032 207-0430	Welded Wire Fabric Sheets, 100 mm x 100 mm x (6x6) mm, 4.24 Kg/m2		7.86
032 207-0440	Welded Wire Fabric Sheets, 100 mm x 400 mm x (8x5) mm, 4.34 Kg/m2		8.45
032 207-0500	Welded Wire Fabric Sheets, 200 mm x 200 mm x (8x8) mm, 4.03 Kg/m2		9.30
032 207-0520	Welded Wire Fabric Sheets, 100 mm x 200 mm x (5x7) mm, 3.57 Kg/m2		7.16
032 207-0540	Welded Wire Fabric Sheets, 100 mm x 200 mm x (6x5.5) mm, 3.16 Kg/m2		6.20
032 207-0600	Welded Wire Fabric Sheets, 100 mm x 400 mm x (6x5) mm, 2.61 Kg/m2		5.49
032 207-650	Welded Wire Fabric Sheets, 100 mm x 400 mm x (4x4) mm, 1.98 Kg/m2		4.51
032 207-0700	Welded Wire Fabric Sheets, 200 mm x 200 mm x (5x5) mm, 1.57 Kg/m2		3.80
032 207-0800	Welded Wire Fabric Sheets, 150 mm x 150 mm x (4x4) mm, 1.29 Kg/m2		3.16
032 207-0900	Welded Wire Fabric Sheets, 200 mm x 200 mm x (4x4) mm, 1.01 Kg/m2	↓	2.62
<b>033</b>	<b>CAST-IN-PLACE CONCRETE</b>		
<b>033 100</b>	<b>STRUCTURAL CONCRETE:</b>		
<b>033 102</b>	<b>AGGREGATE:</b>		
033 102-0010	Aggregate 20 mm (3/4")	CUM	24.00
033 102-0050	Aggregate 10 mm (3/8")		24.00
033 102-0100	Washed sand	↓	25.00
<b>033 114</b>	<b>CEMENT:</b>		
033 114-0100	Ordinary portland cement, Type 1, loose	TON	270.00



## DIVISION 3 : CONCRETE

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
033 114-0110	Ordinary portland cement, Type 1, (50 kg/bag)	BAG	14.00
033 114-0200	Ordinary portland cement, Type V, loose	TON	290.00
033 114-0220	Ordinary portland cement, Type V, ( 50 kg.bag)	BAG	15.00
033 114-0700	White portland cement, loose	TON	500.00
033 114-0720	White portland cement, (50 kg/bag)	BAG	26.00
033 114-1000	White portland cement,high early strength, bag (50 kg/bag)	BAG	26.00
<b>033 118</b>	<b>CONCRETE ADMIXTURES &amp; SURFACE TREATMENTS:</b>		
033 118-0010	Air entraining Agent	LTR.	3.58
033 118-0020	Bonding agent-Acrylic latex	LTR.	10.14
033 118-0030	Bonding agent-Epoxy Resin	KG	45
033 118-0040	Curing Compound(water base)	LTR.	2
033 118-0060	Dust proofing compound	"	3.9
033 118-0070	Epoxy Dust proof coating	KG	2.72
033 118-0100	Hardener	KG	1.92
033 118-0110	Release Agent	LTR.	1.19
033 118-0120	Sealer		17.56
033 118-0130	Water Reducing Admixture		1.71
033 118-0140	Water Proofing integral		1.5
033 118-0150	Set retarder		1.96
033 118-0160	Set Accelerator	↓	2.67
033 118-0170	Pigment for color concrete	KG	4.51
<b>033 126</b>	<b>READY MIX CONCRETE:</b>		
033 126-0100	Concrete readymix, 200 kg/cm2, cement type I	CUM	155.25
033 126-0110	Concrete readymix, 200 kg/cm2, cement type V		161.74
033 126-0120	Concrete readymix, 250 kg/cm2, cement type 1		159.00
033 126-0130	Concrete readymix, 250 kg/cm2, cement type V		185.00
033 126-0140	Concrete readymix, 300 kg/cm2, cement type I		190.00
033 126-0150	Concrete readymix, 300 kg/cm2, cement type V		182.47
033 126-0160	Concrete readymix, 350 kg/cm2, cement type I		200.00
033 126-0170	Concrete readymix, 350 kg/cm2, cement type V	↓	205.00
<b>033 156</b>	<b>GROUT:</b>		
033 156-0010	Grout,non-shrink, metallic	KG	2.40
033 156-0300	Grout,non-shrink,non- metallic	"	1.16
<b>033 184</b>	<b>STAIR TREAD INSERTS:</b>		
033 184-0020	Stair tread inserts,cast iron,abrasive,100 mm wide	LM	57.00
033 184-0040	Stair tread inserts, cast iron,abrasive,150 mm wide		70.28
033 184-0100	Stair tread inserts,cast iron,abrasive, 300 mm wide		155.00
033 184-0550	Stair tread inserts,cast iron,extruded aluminium safety tread,100 mm wide		50.77
033 184-0650	Stair tread inserts,cast iron,extruded aluminium safety tread, 230 mm wide	↓	120.00
<b>033 450</b>	<b>CONCRETE FINISHING:</b>		
<b>033 454</b>	<b>FINISHING FLOORS:</b>		
033 454-0450	Concrete,Integral topping and finish, 1:1:2 mix	KG	2.52
033 454-1350	Concrete,Granolithic topping,for colors, 2.44 kg/m2, average	↓	32.00
033 454-1800	Concrete,Floor abrasives, 1.22 kg/m2, aluminium oxide,or silicon carbide	↓	15.00
033 454-2600	Concrete,Floor colored hardener,metallic,medium service 3.66 kg/m2	KG	9.00
033 454-2650	Concrete,Floor colored hardener,non-metallic,medium service 3.66 kg/m2	↓	1.84
033 454-3850	Concrete floor Dustproofing,silicate liquids, 2 coats	↓	3.16
033 454-4000	Concrete floor,Dustproofing,Epoxy coating, 1 coat, clear	KG	14.75
033 454-4050	Concrete floor,Dustproofing,Epoxy coating, 1 coat,Colors	KG	14.75



## DIVISION 3 : CONCRETE

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
<b>034</b>	<b>PRECAST CONCRETE</b>		
<b>034 100</b>	<b>STRUCTURAL PRECAST:</b>		
<b>034 104</b>	<b>STRUCTURAL MEMBERS:</b>		
034 104-0011	Precast concrete beams, average	CUM	1,390.00
034 104-1050	Precast concrete column, average	CUM	1,900.00
<b>034 128</b>	<b>JOISTS:</b>		
034 128-0010	Precast Concrete Joists, slab 195 KG/M2 L.L., 150 mm deep for 3.7 m spans	LM	82.00
034 128-0050	Precast Concrete Joists, slab, 195 KG/M2 L.L., 200 mm deep for 4.9 m spans	LM	150.00
034 128-0100	Precast Concrete Joists, slab 195 KG/M2 L.L., 250 mm deep for 6.1 m spans	LM	280.00
034 128-0150	Precast Concrete Joists, 195 KG/M2 L.L., 300 mm deep for 7.3 m spans	LM	485.00
<b>034 136</b>	<b>SLABS:</b>		
034 136-0050	Precast Slabs hollowcore 150 mm	LM	80.00
034 136-0100	Precast Slabs hollowcore 200 mm		104.00
034 136-0200	Precast Slabs hollowcore 250 mm	↓	130.00
<b>034 500</b>	<b>ARCHITECTURAL PRECAST:</b>		
<b>034 504</b>	<b>WALL PANELS:</b>		
034 504-0150	Precast Concrete Panel 100 mm thick	SQM	125.00
034 504-0200	Precast Concrete Panel 150 mm thick		187.00
034 504-0250	Precast Concrete Panel 200 mm thick		250.00
034 504-0350	Precast Concrete Panel 100 mm thick, exposed aggregate.		145.00
034 504-0450	Precast Concrete Panel 150 mm thick, exposed aggregate.		218.00
034 504-0550	Precast Concrete Panel 200 mm thick, exposed aggregate.		290.00
034 504-1000	Precast Concrete Panel 200 mm thick, insulated, exposed aggregate.		315.00
034 504-1000	Precast Concrete Panel 200 mm thick, insulated, textured.	↓	295.00
<b>034 800</b>	<b>PRECAST SPECIALTIES:</b>		
<b>034 802</b>	<b>LINTELS:</b>		
034 802-0800	Lintel, Precast concrete, 100 mm x 200 mm, to 1500 mm long	LM	95.00
034 802-1250	Lintel, Precast concrete, 200 mm wide, 200 mm height, to 3600 mm long		105.00
034 802-1450	Lintel, Precast concrete, 300 mm wide, 200 mm height, to 5800 mm long	↓	135.00
<b>035</b>	<b>CEMENTITIOUS DECKS</b>		
<b>035 200</b>	<b>LIGHTWEIGHT CONCRETE:</b>		
<b>035 212</b>	<b>INSULATING</b>		
035 212-0020	Portland cement & foaming agent, roof tile, 1:6 mix	CUM	300.00
035 212-0200	Vermiculite or Perlite ready mix ratio 1:6	"	12.00
<b>035 304</b>	<b>WOOD FIBER SYSTEMS</b>		
035 304-0050	Formboard fiber cement, 3 mm thick	SQM	44.64
035 304-0070	Formboard fiber cement, 6 mm thick	↓	130.30
035 304-0070	Formboard fiberglass, 25 mm thick	↓	32.00
<b>035 306</b>	<b>WOOD FIBER</b>		
035 306-0150	Wood fiber lightweight cement, tongue & groove planks, 65 mm	SQM	35.57
035 306-0150	Wood fiber lightweight cement, tongue & groove planks, polyurethane insulated, 50 mm thick	"	64.84

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# Division 4

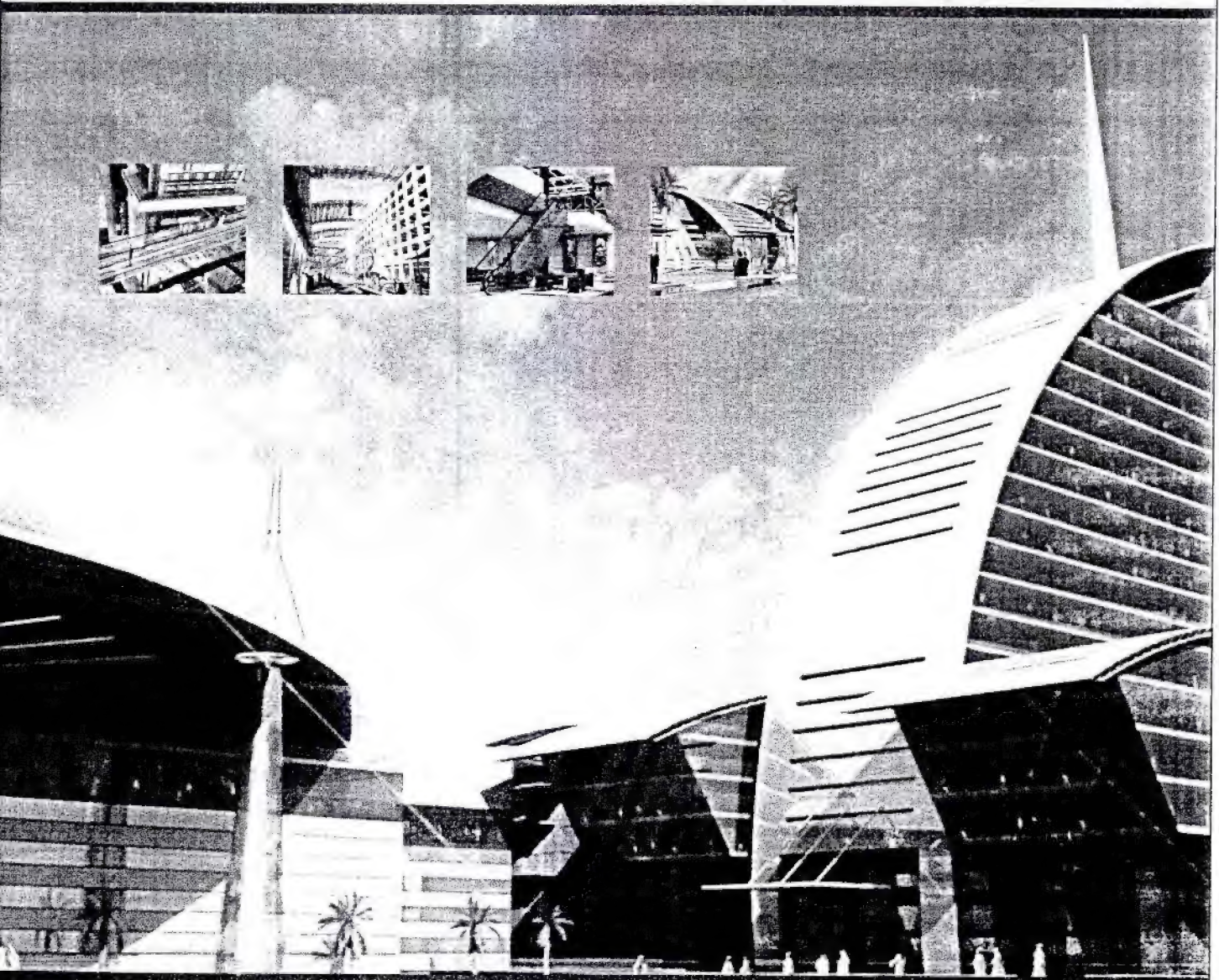
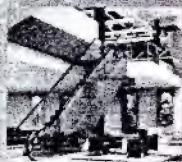
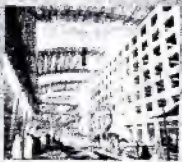
## Masonry



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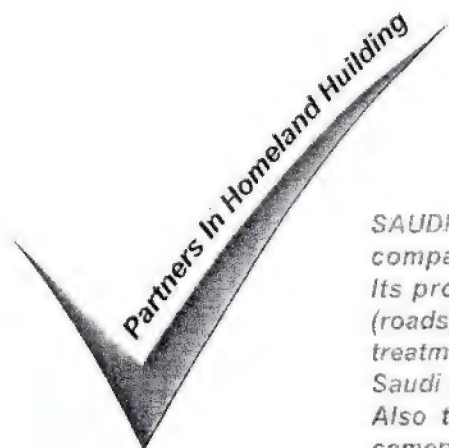
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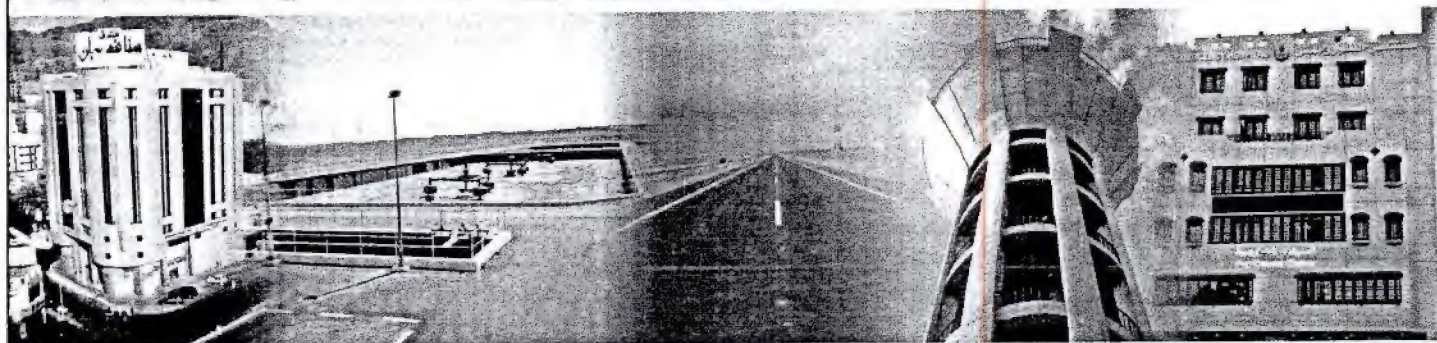
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Sika Gulf B.s.c. (C)

P.O.Box 15776 Adliya - Bahrain

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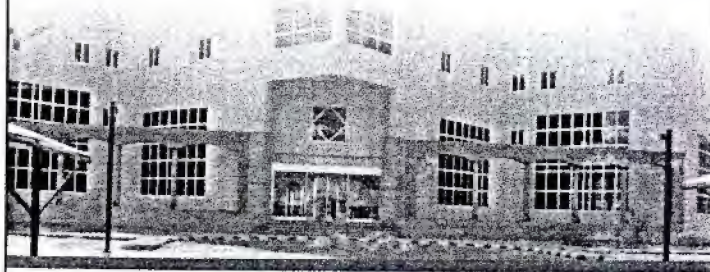


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## DIVISION 4 : MASONRY

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
<b>041</b>	<b>MORTAR &amp; MASONRY ACCESSORIES</b>		
<b>041 100</b>	<b>MORTAR</b>		
<b>041 008</b>	<b>CEMENT:</b>		
041 008-0010	Gypsum (40 kg/bag)	BAG	12.00
041 008-0100	Portland cement (50 Kg bag)		15.00
041 008-0020	White cement (50 kg/bag)	↓	26.00
<b>041 016</b>	<b>GROUTING:</b>		
041 016-2000	Non shrinking grout for machinery foundation in 25 kg/bag	KG	1.40
041 016-2100	Cementitious non shrinking grout in 25 kg/bag	..	0.80
<b>041 020</b>	<b>LIME:</b>		
041 020-0010	Lime,mason hydrated 20 kg/bag	BAG	12.00
041 020-0050	Lime,truck loaded lots	TON	800.00
041 020-0200	Lime finish,hydrated 20 kg bag	BAG	12.00
<b>041 024</b>	<b>MORTAR:</b>		
041 024-0100	Mortar with masonry cement, mix type M, 1:1:6 mix	CUM	266.00
041 024-0200	Mortar with masonry cement, mix type N, 1:3 mix		295.00
041 024-2100	Mortar with portland cement and lime, mix type M, 1:1/4:3 mix		388.00
041 024-2200	Mortar with portland cement and lime, mix type N, 1:1:16 mix, 5170 Kpa		313.25
041 024-2800	Mortar for glass block	↓	692.80
<b>041 032</b>	<b>SAND:</b>		
041 032-0010	Sand for mortar,screend & washed	CUM	28.00
<b>041 040</b>	<b>WATERPROOFING:</b>		
041 040-0010	Waterproofing admixture	LTR	2.00
<b>041 036</b>	<b>SURFACE BONDING:</b>		
041 036-0020	Surface Bonding Block walls with fiberglass mortar, gray or white color	SQM	15.27
<b>041 500</b>	<b>MASONRY ACCESSORIES</b>		
<b>041 504</b>	<b>ANCHOR BOLTS:</b>		
041 504-0010	Anchor bolts hooked w/nut and washer, 12 mm dia., 180 mm long	EA	3.60
041 504-0030	Anchor bolts hooked w/nut and washer, 12 mm dia., 240 mm long		4.60
041 504-0040	Anchor bolts hooked w/nut and washer, 16 mm dia., 140 mm long		5.50
041 504-0050	Anchor bolts hooked w/nut and washer,16 mm dia.,190 mm long		5.90
041 504-0060	Anchor bolts hooked w/nut and washer, 20 mm dia., 200 mm long		12.00
041 504-0070	Anchor bolts hooked w/nut and washer, 20 mm dia., 300 mm long	↓	13.50
<b>041 508</b>	<b>CONTROL JOINT:</b>		
041 508-0010	Control joint PVC, 100 mm and wider wall	LM	26.95
041 508-0100	Control joint PVC, 150 mm wall only		25.85
041 508-0140	Control joint PVC, 200 mm and wider wall		27.89
041 508-0180	Control joint PVC, 300 mm wall	↓	33.00
<b>041 512</b>	<b>JOINT REINFORCING:</b>		
041 512-0010	Joint Reinforcing steel bars, 10 mm bars	KG	1.72
041 512-0020	Joint Reinforcing steel bars,15 mm, & 20 mm bars	..	1.64
041 512-0200	Joint Reinforcing Wire strips, regular truss, to 200 mm wide, galvanized	LM	2.40
041 512-0250	Joint Reinforcing Wire strips, regular truss, to 300 mm wide, galvanized	LM	2.70
041 512-0400	Joint Reinforcing, Cavity truss with drip section to 150 mm wide	LM	1.60



## DIVISION 4 : MASONRY

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
041 512-0450	Joint Reinforcing, Cavity truss with drip section to 300 mm wide	LM	2.10
<b>041 518</b>	<b>WALL PLUGS:</b>		
041 518-0010	Wall Plugs, for nailing to brickwork, 26 ga., galvanized, plain	100 PCS	80.00
<b>041 520</b>	<b>WALL TIES:</b>		
041 520-0010	Wall Ties, to brick veneer, galv., corrugated, 20 mm x 180 mm, 22 ga	EA	5.55
041 520-0020	Wall Ties, Cavity wall, 150 mm long, Z type, galvanized, 4 mm		1.75
041 520-0600	Wall Ties, Cavity wall, 150 mm long, Z type, galvanized, 6 mm		5.00
041 520-0700	Wall Ties, Cavity wall, 200 mm long, Z type, galvanized, 4 mm		2.80
041 520-0800	Wall Ties, Cavity wall, 200 mm long, Z type, galvanized, 6 mm		6.00
041 520-1500	Wall Tiles, Rigid partition anchors, plain, 200 mm long and upto 25 mm x 3 mm		2.42
041 520-1580	Wall Tiles, Rigid partition anchors, plain, 200 mm long and upto 40 mm x 6 mm		5.65
041 520-1650	Wall Tiles, Rigid partition anchors, plain, 200 mm long and upto 50 mm x 3 mm		3.52
<b>041 524</b>	<b>VENT BOX:</b>		
041 524-0010	Vent Box, Extruded aluminum, 100 mm deep, 60 mm x 200 mm	EA	59.46
041 524-0150	Vent Box, Extruded aluminum, 100 mm deep, 127 mm x 420 mm		119.74
041 524-0200	Vent Box, Extruded aluminum, 100 mm deep, 150 mm x 420 mm		125.24
041 524-0250	Vent Box, Extruded aluminum, 100 mm deep, 197 mm x 420 mm		446.75
041 524-1000	Vent box stainless steel for ventilators, 150 mm x 150 mm		254.00
041 524-1050	Vent box stainless steel for ventilators, 200 mm x 200 mm		290.40
041 524-1100	Vent box stainless steel for ventilators, 300 mm x 300 mm		297.00
041 524-1150	Vent box stainless steel for ventilators, 300 mm x 150 mm		280.84
<b>042</b>	<b>UNIT MASONRY</b>		
<b>042 100</b>	<b>BRICK MASONRY</b>		
<b>042 116</b>	<b>COPING:</b>		
042 116-0010	Coping for 300 mm wall, aluminum	LM	108.00
042 116-0050	Coping precast conc. 255 mm wide, 100 mm tapers to 90 mm, for 200 mm wall		108.00
042 116-0500	Coping Marble to 100 mm thick, 230 mm wide		187.75
<b>042 124</b>	<b>FACE BRICK:</b>		
042 124-0300	Clay facing/fire bricks, Standard size 100 mm x 210 mm x 55 mm Solid	1000 PCS	850.00
042 124-0400	Clay facing/fire bricks, Standard size 115 mm x 240 mm x 71 mm punched		900.00
042 124-0500	Clay facing/fire bricks, Standard size 200 mm x 200 mm x 30 mm		1,557.00
042 124-0500	Clay facing/fire bricks, Standard size 200 mm x 200 mm x 110 mm, decorative, screen.		1,650.00
<b>042 156</b>	<b>CLAY UNIT MASONRY:</b>		
042 156-0100	Clay unit masonry, hollow, 200 mm x 400 mm, 50 mm thick	1000 PCS	1,175.00
042 156-0200	Clay unit masonry, hollow, 200 mm x 200 mm, 100 mm thick		850.00
042 156-0300	Clay unit masonry, hollow, 200 mm x 400 mm, 100 mm thick		1,320.00
042 156-0400	Clay unit masonry, hollow, 200 mm x 200 mm, 150 mm thick		1,050.00
042 156-0500	Clay unit masonry, hollow, 200 mm x 300 mm, 150 mm thick		1,320.00
042 156-0600	Clay unit masonry, hollow, 200 mm x 400 mm, 150 mm thick		1,325.00
042 156-0700	Clay unit masonry, hollow, 200 mm x 200 mm, 200 mm thick		1,130.00
042 156-0800	Clay unit masonry, hollow, 200 mm x 300 mm, 200 mm thick	1000 PCS	1,450.00
042 156-0900	Clay unit masonry, hollow, 200 mm x 400 mm, 200 mm thick	1000 PCS	1,900.00



## DIVISION 4 : MASONRY

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
042 156-1000	Clay unit masonry,hollow hordi, ceiling blocks,200mm x400mm,200mm thick		2,200.00
042 156-1100	Clay unit masonry,hollow hordi, ceiling blocks, 200mm x 300mm, 200mm thick		2,450.00
042 156-1200	Clay unit masonry,hollow hordi, ceiling blocks, 200mm x 400mm, 250mm thick		2,600.00
042 156-1300	Clay unit masonry,hollow hordi, ceiling blocks, 250mm x 300mm, 200mm thick	↓	2,450.00
<b>042 194</b>	<b>WINDOW SILL:</b>		
042 194-0100	Windows Sill Cut stone, 125 mm x 200 mm plain		38.50
042 194-0400	Windows Sill Marble, 230 mm wide, 25 mm thick	LM	70.40
042 194-0600	Windows Sill precast conc., 230 mm wide, 100 mm tapers to 75 mm, 200 mm wall	LM	60.50
<b>042 200</b>	<b>CONCRETE UNIT MASONRY</b>		
<b>042 216</b>	<b>CONCRETE BLOCK</b>		
042 216-0010	Concrete Block, 200 mm x 400 mm, 100mm thick	EA	1.20
042 216-1100	Concrete Block, 200 mm x 400 mm, 150 mm thick	EA	1.40
042 216-1150	Concrete Block,200 mm x 400 mm, 200mm thick		1.60
042 216-1200	Concrete Block, 200 mm x 400 mm, 250mm thick		1.80
042 216-1250	Concrete Block, 200 mm x 400 mm, 300mm thick		2.10
042 216-1300	Lightweight concrete block,hollow hordi, 200 x 400 x 200 mm		1.87
042 216-1350	Lightweight concrete block,hollow hordi, 200 x 400 x 250 mm		2.07
042 216-1360	Lightweight concrete block,hollow hordi, 200 x 400 x 330 mm		2.86
042 216-1400	Concrete Block, solid 100 mm x 200 mm x 400 mm		1.70
042 216-1450	Concrete Block, solid 150 mm x 200 mm x 400 mm		2.00
042 216-1500	Concrete Block, solid 200 mm x 200 mm x 400 mm	↓	2.40
<b>042 220</b>	<b>CONCRETE BLOCK,DECORATIVE:</b>		
042 220-1450	Concrete Block, Decorative, Deep grooved, smooth face, 200 mm x 400 mm x 100 mm thick	SQM	23.13
042 220-1500	Concrete Block, Decorative, Deep grooved, smooth face, 200 mm x 400 mm x 200 mm thick		35.63
042 220-5100	Concrete block, decorative, split rib profile units, 25mm deep ribs, 8 ribs, 200 mm x 400 mm x 100 mm thick		23.13
042 220-5150	Concrete block, decorative, split rib profile units, 25 mm deep ribs, 8 ribs, 200 mm x 400 mm x 150 mm thick	↓	25.44
042 220-6100	Concrete block, decorative, split face, 190 mm x 390 mm x 100 mm thick	EA	2.00
042 220-6110	Concrete block, decorative, split face, 190 mm x 390 mm x 200 mm thick		2.40
042 220-6120	Concrete block, decorative, split face, 190 mm x 390 mm x 250 mm thick	↓	2.75
<b>042 224</b>	<b>CONCRETE BLOCK, INTERLOCKING:</b>		
042 224-0010	Concrete block, interlocking, 60 mm thick	SQM	26.00
042 224-0020	Concrete block, interlocking, 80 mm thick	"	28.00
<b>042 232</b>	<b>CONCRETE BLOCK, PARTITIONS:</b>		
042 232-2800	Lightweight concrete block,solid, 600 mm x 250 mm x 100 mm thick	CUM	220.00
042 232-2900	Lightweight concrete block,solid, 600 mm x 250 mm x 200 mm thick		220.00
042 232-2950	Lightweight concrete block,solid, 600 mm x 250 mm x 300 mm thick	↓	220.00
<b>042 252</b>	<b>INSULATED BLOCK, INSULATION: See also division 072-108</b>		
042 252-0250	Insulation, inserts, Polystyrene or styrofoam, plant installed,for clay block units size 200 mm x 400 mm, 200 mm thick	1000 PCS	2,222.50
042 252-0300	Insulation, inserts, Polystyrene or styrofoam, plant installed,for clay block units size 200 mm x 400 mm, 250 mm thick		2,470.65



## DIVISION 4 : MASONRY

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
042 252-0500	Insulation, inserts, Polystyrene or styrofoam, plant installed, for clay block units size 200 mm x 400 mm, 300 mm thick		2,950.50
042 252-0500	Insulation, inserts, Polystyrene or styrofoam, plant installed, for clay block units size 200 mm x 500 mm, 300 mm thick		2,772.00
<b>042 700</b>	<b>GLASS UNIT MASONRY</b>		
<b>042 704</b>	<b>GLASS BLOCK:</b>		
042 704-0100	Glass Block, 100 mm thick, plain, 150 mm x 150 mm block	SQM	800.00
042 704-0150	Glass Block, 100 mm thick, plain, 200 mm x 200 mm block		425.00
042 704-0200	Glass Block, 100 mm thick, plain, 300 mm x 300 mm block		577.80
042 704-0300	Glass Block, solar reflective, 100 mm thick, 150 mm x 150 mm block		950.00
042 704-0350	Glass Block, solar reflective, 100 mm thick, 200 mm x 200 mm block		525.00
042 704-0500	Glass Block, solar reflective, 100 mm thick, 300 mm x 300 mm block		633.00
042 704-1000	Glass Block, 79 mm thick thinline, plain, 150 mm x 150 mm block		900.00
042 704-1050	Glass Block, 79 mm thick thinline, plain, 200 mm x 200 mm block		475.00
<b>044</b>	<b>STONE</b>		
<b>044 100</b>	<b>ROUGH STONE</b>		
<b>044 104</b>	<b>ROUGH STONE WALL:</b>		
044 104-0100	Rough Stone Wall, dry, Random fieldstone, over 500 mm thick	SQM	110.00
<b>044 200</b>	<b>CUT STONE</b>		
<b>044 204</b>	<b>STONE CUT TO LENGTH:</b>		
044 204-0100	Stone, random cut 70mm wide, 1.8 m long, 40 mm thick	SQM	65.00
044 204-0150	Stone, random cut 110mm wide, 1.8 m long, 40 mm thick		65.00
044 204-0200	Stone, random cut 150mm wide, 1.8 m long, 40 mm thick		62.00
044 204-0250	Stone, random cut 200mm wide, 1.8 m long, 40 mm thick		62.00
044 204-0300	Stone, sort random cut 200mm wide, 1.8 m long, 40 mm thick		62.00
044 204-0500	Stone for Sills, cut to size, natural cleft, 250 mm wide to 1.8 m long, 40 mm thick		62.00
044 204-0550	Stone for Sills, cut to size natural cleft, 250 mm wide to 1.8 m long, 50 mm thick		58.00
044 204-1000	Stone for Stair treads, natural cleft, 300 mm wide, 1.8 m long, 40 mm thick		70.00
044 204-1050	Stone for Stair treads, natural cleft, 300 mm wide, 1.8 m long, 50 mm thick		82.00
044 204-1100	Stone for Stair treads, 300 mm wide, 1.8 m long, smooth finish, 40 mm thick		82.00
<b>044 500</b>	<b>STONE VENEER</b>		
<b>044 508</b>	<b>LIGHTWEIGHT NATURAL STONE:</b>		
044 508-0100	Lightweight natural stone lava type, veneer, rubble face, or sawed face, sawed back, irregular	SQM	57.00
<b>044 550</b>	<b>MARBLE</b>		
<b>044 554</b>	<b>MARBLE:</b>		
044 554-0100	Marble base, polished, 20 mm thick, 150 mm high	SQM	215.00
044 554-2200	Marble, Window Sills, 150 mm x 20 mm thick		215.00
044 554-3200	Marble, Cobblestone, Pavin, cut to sizes, Radial square.		330.00
044 554-3300	Marble, Cobblestone, Pavin, cut to sizes, Square.	SQM	255.00
044 554-3400	Marble, Cobblestone, Pavin, cut to sizes, Hexagonal		315.00
044 554-3500	Marble, Cobblestone, Classical Eye Pavin, cut to sizes		240.00
044 554-3600	Marble, Pebblestone, Classical Pavin, cut to sizes		212.00
044 554-3700	Marble, Pebblestone, Square Pavin, cut to sizes		212.00



## DIVISION 4 : MASONRY

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
044 554-4000	Marble, wall, 300 mm x 800 mm x 40 mm, Travertine, average	↓	285.00
044 554-5000	Marble, 300 mm x 300 mm x 10 mm, white cerarra	SQM	115.00
044 554-5100	Marble, 400 mm x 400 mm x 20 mm, white cerarra	↓	98.00
044 554-5200	Marble partitions for shower or toilet 20 mm thick	↓	180.00
044 554-5250	Marble for stair, risers, 20 mm thick, 150 mm high, cerarra white	LM	18.00
044 554-5300	Marble stair treads, 300 mm wide x 30 mm thick random lengths, cerarra white	LM	68.00
044 554-6000	Marble, botticino, beige color	SQM	135.00
044 554-6100	Marble, pentalique, off white color	↓	275.00
044 554-6200	Marble, rosa aurora, redish color	↓	210.00
<b>044 650</b>	<b>GRANITE:</b>		
<b>044 651</b>	<b>GRANITE:</b>		
044 651-6000	Granite local, abu rukab 300 x 600mm or 400 x 400 mm or 300 x 300 mm, 20mm thick	SQM	170.00
044 651-6050	Granite local, abu rukab 300 x 600 mm or 400 x 400 mm or 300 x 300 mm, 30 mm thick		218.00
044 651-6100	Granite local, abu rukab cut to 400 x 800 mm, 20 mm thick		180.00
044 651-6150	Granite local, abu rukab cut to 400 x 800 mm, 30 mm thick		183.00
044 651-6200	Granite local, homiat cut to 300 x 600 mm, or 400 x 400 mm or 300 x 300 mm; 20 mm thick		185.00
044 651-6250	Granite local, homiat cut to 300 x 600 mm, or 400 x 400 mm or 300 x 300 mm; 30 mm thick		235.00
044 651-6300	Granite local, homiat cut to 400 x 800 mm, 20 mm thick		198.00
044 651-6350	Granite local, homiat cut to 400 x 800 mm, 30 mm thick		240.00
044 651-6500	Granite local, Ruweidah, cut to 300 x 600 mm or 400 x 400 mm or 300 x 300 mm, 20 mm thick		210.00
044 651-6600	Granite local, Ruweidah, cut to 300x600mm or 400x400mm or 300x300mm, 30mm thick		230.00
044 651-6700	Granite local, Ruweidah, cut to 400 x 800 mm, 20 mm thick		195.00
044 651-6800	Granite local, Ruweidah, cut to 400 x 800 mm, 30 mm thick		248.00
044 651-7500	Granite local, Saudi rosa 300 x 600 mm, 30 mm thick		490.00
044 651-8000	Granite local, Saudi brown 300 x 600 mm, 40 mm thick		310.00
044 651-8200	Granite local, Saudi bianco 300 x 600 mm, 20 mm thick		420.00
044 651-8250	Granite local, Saudi bianco 400 x 400 mm, 20 mm thick		510.00
044 651-8320	Granite local, Saudi bonito 600 x 600 mm, 20 mm thick		300.00
044 651-8340	Granite local, Saudi bonito 400 x 800 mm, 20 mm thick		350.00
044 651-8360	Granite local, Saudi bonito 300 x 300 mm, 40 mm thick		190.00
044 651-8500	Granite local, Saudi salmon, 300 x 600 mm, 20 mm thick		152.00
044 651-8520	Granite local, Saudi salmon, 300 x 600 mm, 30 mm thick		183.00
044 651-8540	Granite local, Saudi salmon, 300 x 600 mm, 40 mm thick		260.00
044 651-8550	Granite local, Silver Pearl 300 x 600 x 20 mm		142.00
044 651-8555	Granite local, Silver Pearl 400 x 400 x 20 mm	↓	142.00
044 651-8560	Granite local, Silver Pearl 400 x 800 x 20 mm	SQM	142.00
044 651-8565	Granite local, Golden Leaf 300 x 600 x 20 mm		165.00
044 651-8570	Granite local, Golden Leaf 400 x 400 x 20 mm		165.00
044 651-8575	Granite local, Golden Leaf 400 x 800 x 20 mm		168.00
044 651-8580	Granite local, Tropic Brown 300 x 600 x 20 mm		150.00
044 651-8585	Granite local, Tropic Brown 400 x 400 x 20 mm		150.00

## DIVISION 4 : MASONRY

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
044 651-8590	Granite local, Tropic Brown 400 x 800 x 20 mm		150.00
044 651-8595	Granite local, Violeta 300 x 600 x 20 mm		170.00
044 651-8600	Granite local, Violeta 400 x 400 x 20 mm		170.00
044 651-8605	Granite local, Violeta 400 x 800 x 20 mm		170.00
044 651-8610	Granite local, Emerald Green 300 x 600 x 20 mm		205.00
044 651-8615	Granite local, Emerald Green 400 x 400 x 20 mm		215.00
044 651-8620	Granite local, Emerald Green 400 x 800 x 20 mm		215.00
044 651-8625	Granite local, Emerald Green 300 x 600 x 20 mm		205.00
044 651-8635	Granite local, Emerald Green 400 x 800 x 20 mm		215.00
044 651-8640	Granite local, Blue Granite 300 x 600 x 20 mm		440.00
044 651-8645	Granite local, Blue Granite 400 x 400 x 20 mm		440.00
044 651-8640	Granite local, Blue Granite 400 x 800 x 20 mm	↓	435.00
<b>044 700</b>	<b>SANDSTONE</b>		
<b>044 704</b>	<b>SANDSTONE OR BROWNSTONE:</b>		
044 704-4000	Stone veneer,saw cut, 600 x 300 x 30 mm	SQM	52.00
044 704-4200	Stone veneer,saw cut, 600 x 300 x 40 mm		55.00
044 704-4400	Stone,solid and polished 600x300x40 mm		50.00
044 704-4600	Stone,solid,bush hammered 600 x 300 x 40 mm		60.00
044 704-5000	Stone,solid,bush hammered 600 x 300 x60 mm		70.00
044 704-5800	Stone,yellow,saw cut polished 600 x 300 x 40 mm		50.00
044 704-6500	Stone,yellow,bush hammered 600 x 300 x 40 mm		50.00
044 704-7000	Stone,beige,saw cut 600 x 300 x 40 mm		45.00
044 704-7600	Stone,beige,bush hammered, 600 x 300 x 60 mm		72.00
044 704-8000	Stone,beige,smooth, 600 x 300 x 40 mm	↓	50.00

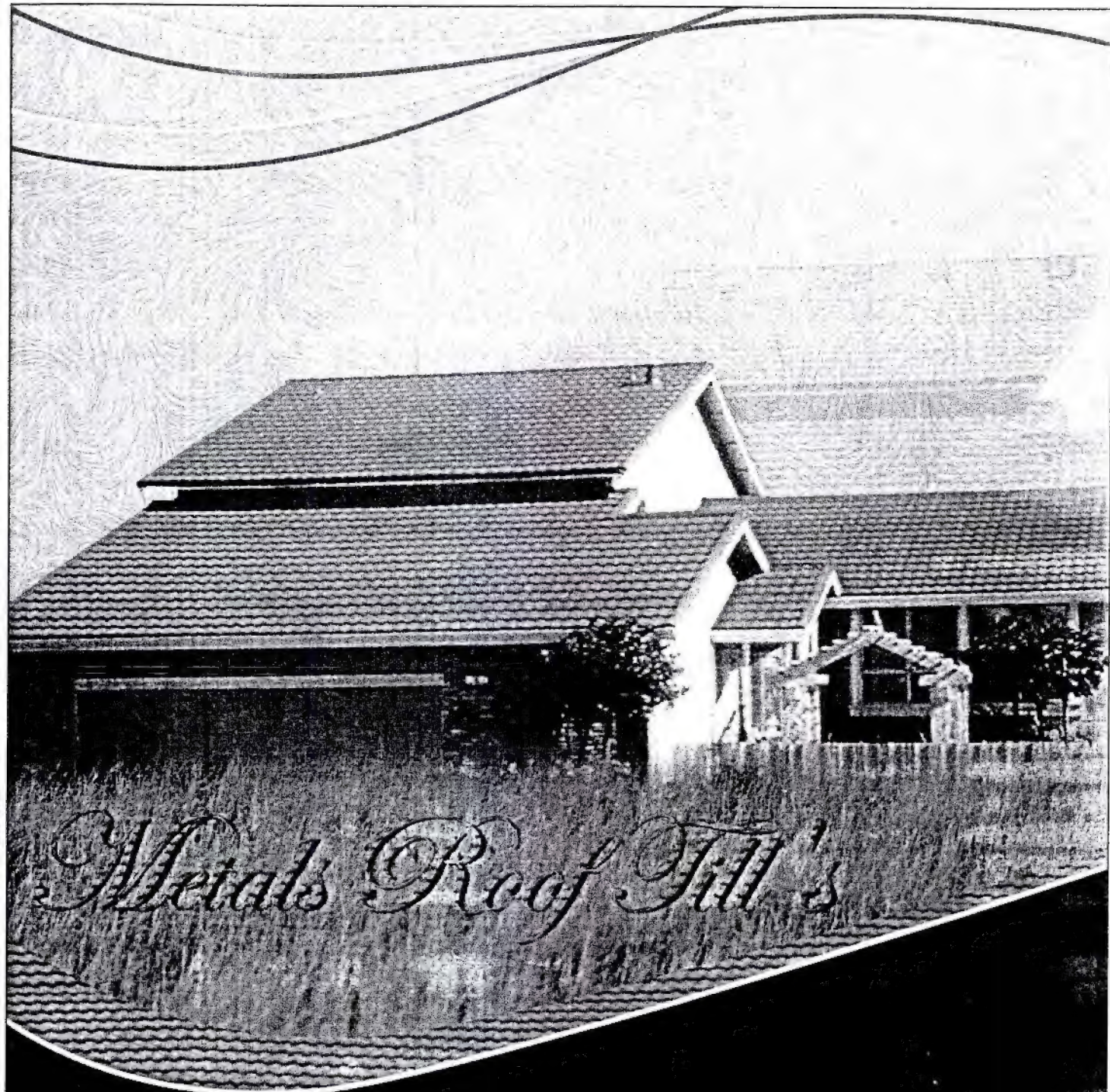


A decorative geometric pattern, likely a traditional Islamic or Arabesque design, is located in the top right corner of the page. It features a complex, repeating lattice of lines forming various polygons and star-like shapes. The pattern is rendered in a light gray color against a darker background.

# Division 5

## Metals





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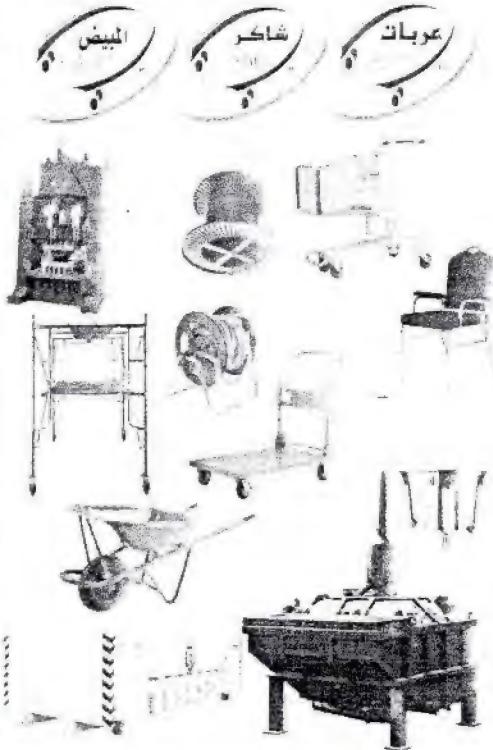
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## DIVISION 5 : METALS

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
<b>050</b>	<b>METAL MATERIALS, FINISHES &amp; FASTENINGS</b>		
<b>050 500</b>	<b>METAL FASTENING:</b>		
<b>050 510</b>	<b>CURB EDGING:</b>		
050 510-0010	Curb Edging St. angle 25 mm x 25 mm x 6 m, 1.2 kg/m	LM	3.00
050 510-0100	Curb Edging St. angle 50 mm x 50 mm, 4.47 kg/m		11.50
050 510-0150	Curb Edging St. angle 50 mm x 50 mm x 6 m, 3.77 kg/m		9.66
050 510-0200	Curb Edging St. angle 75 mm x 75 mm, 10 kg/m		25.83
050 510-0250	Curb Edging St. angle 75 mm x 75 mm x 6 m, 6.85 kg/m		17.00
050 510-0300	Curb Edging St. angle 100 mm x 100 mm, 15 kg/m		38.33
050 510-0350	Curb Edging St. angle 100 mm x 100 mm x 6 m, 12.2 kg/m		31.16
050 510-1000	Curb Edging St. angle 150 mm x 90 mm, 18.3 kg/m		67.47
050 510-1020	Curb Edging St. angle 150 mm x 100 mm x 6 m, 19 kg/m		70.30
050 510-1050	Curb Edging Steel channels ,75 mm channel, 6.92 kg/m		20.00
050 510-1100	Curb Edging Steel channels 100 mm channel, 9.36 kg/m		28.00
050 510-1200	Curb Edging Steel channels 150 mm channel, 18.6 kg/m		57.83
050 510-1300	Curb Edging Steel channels 200 mm channel, 24.6 kg/m		76.50
050 510-1400	Curb Edging Steel channels 250 mm channel, 34.6 kg/m		114.20
050 510-1450	Curb Edging Steel channels 250 mm x 12 m channel, 24 kg/m		34.80
050 510-1500	Curb Edging Steel channels 300 mm channel, 38.1 kg/m		251.83
050 510-1600	Curb Edging Steel channels 300 mm x 12 m channel, 31 kg/m	↓	125.92
<b>050 520</b>	<b>EXPANSION ANCHORS:</b>		
050 520-0400	Bolt anchor for concrete, brick or stone, expansion shield, zinc, 10 mm dia., 53 mm long	EA	0.75
050 520-0800	Bolt anchor for concrete, brick or stone, expansion shield, zinc, 16 mm dia., 68 mm long		1.50
050 520-1000	Bolt anchor for concrete, brick or stone, expansion shield, zinc, 19 mm dia., 100 mm long		2.75
050 520-1300	Bolt anchor for concrete, brick or stone, expansion shield, zinc, 25 mm dia., 150 mm long		32.00
050 520-1500	Self drilling ,steel, 12 mm diam. bolt		6.75
050 520-2000	Self drilling ,steel, 20 mm diam. bolt		17.60
050 520-3400	Toggle bolt, bright steel, 6 mm dia., 76 mm long		1.20
050 520-3600	Toggle bolt, bright steel, 10 mm dia., 76 mm long		2.40
050 520-3900	Toggle bolt, bright steel, 13 mm dia., 150 mm long		10.45
050 520-8250	Wedge anchor, Galv. steel, 10 mm dia., 40 mm long		0.55
050 520-8500	Wedge anchor, Galv. steel, 12 mm dia., 50 mm long		0.80
050 520-8700	Wedge anchor, Galv. steel, 20 mm dia., 80 mm long	↓	1.10
<b>050 530</b>	<b>LAG SCREWS:</b>		
050 530-0300	Lag screw steel, 16 mm dia., 76 mm long	EA	1.25
<b>050 540</b>	<b>MACHINE ANCHORS:</b>		
050 540-0300	Anchor bolt w/fiber plug, nut & washer, 16 mm diameter.	EA	73.50
050 540-0600	Anchor bolt w/fiber plug, nut & washer, 22 mm diameter.	"	90.60
<b>050 545</b>	<b>RIVETS:</b>		
050 545-0200	Aluminum rivets & mandrel, 5 mm dia.	100 PCS	13.60
050 545-0500	Copper rivet, steel mandrel, 3 mm dia.	100 PCS	15.00
050 545-1100	Stainless steel rivet steel mandrel, 5 mm dia.	100 PCS	35.20



## DIVISION 5 : METALS

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
<b>051</b>	<b>STRUCTURAL METAL FRAMING</b>		
<b>051 100</b>	<b>BRACING</b>		
<b>051 108</b>	<b>BRACING:</b>		
051 108-0300	Bracing Let-in, "T" shaped, 20 ga. galv. steel, studs	LM	5.40
051 108-0500	Bracing, 16 ga. galv. steel straps	"	4.80
<b>051 200</b>	<b>STRUCTURAL STEEL:</b>		
<b>051 220</b>	<b>COLUMNS:</b>		
051 220-0010	Aluminium, extruded, stock units 150 mm dia., powder coating finish	LM	1,260.00
051 220-0300	Aluminium, extruded, stock units 200 mm dia., powder coating finish		2,348.00
051 220-0510	Aluminium, extruded, stock units Square columns 200 mm dia.		770.00
051 220-1900	Steel pipe, extra strong, 250 mm dia. x 5.5 mm thick x 6 m		2,750.00
051 220-3300	Square structural tubing, 150 mm, 6mm thick, 26.8kg/m		190.75
051 220-3310	Square structural tubing, 150 mm, 6.06 mm thick x 26.8kg/m, 6 Mtr. Long		381.50
051 220-4600	Square structural tubing, 250 mm, 10 mm thick x 51kg/m, 12 Mtr. Long		429.00
051 220-4700	Square structural tubing, 200 mm, 12 mm thick, x 58.8kg/m, 12 Mtr. Long		419.66
051 220-5200	Rectangular structural tubing, 150 x 100 x 10 mm, 35.3kg/m, 12 Mtr. Long		252.10
051 220-5300	Rectangular structural tubing, 200 x 100 x 10 mm, 51kg/m, 12 Mtr. Long		308.64
051 220-6800	Wide flange, A36 steel beam, W 203 x 46.1 kgs/m, 12 Mtr. Long		156.42
051 220-6950	Wide flange, A36 steel beam, W 254 x 89.4 kgs/m, 12 Mtr. Long		302.58
051 220-7050	Wide flange, A36 steel beam, W 254 x 107 kgs/m, 12 Mtr. Long		363.75
051 220-7200	Wide flange, A36 steel beam, W 305 x 118 kgs, 12 Mtr. Long		401.16
051 220-7250	Wide flange, A36 steel beam, W 305 x 137 kgs, 12 Mtr. Long		465.83
051 220-7400	Wide flange, A36 steel beam, W 356 x 177 kgs, 12 Mtr. Long		601.75
051 220-7460	I-Beam 200 mm x 100 mm, 22.40 kgs, 12 Mtr. Long		71.68
051 220-7470	I-Beam 240 mm x 120 mm, 30.70 kgs, 12 Mtr. Long		98.40
051 220-7480	I-Beam 300 mm x 150 mm, 42.20 kg/Mt, 12 Mtr. Long		135.36
051 220-7490	I-Beam 330 mm x 160 mm, 49.10 kg/Mt, 12 Mtr. Long		157.79
051 220-7500	I-Beam 310 mm x 300 mm, 97.60 kg/Mt, 12 Mtr. Long		312.20
051 220-7510	I-Beam 360 mm x 170 mm, 57.10 kg/Mt, 12 Mtr. Long		182.65
051 220-7520	I-Beam 350 mm x 300 mm, 93 kg/Mt, 12 Mtr. Long		297.62
051 220-7530	I-Beam 900 mm x 400 mm, 300 kg/Mt, 12 Mtr. Long	↓	960.00
<b>051 230</b>	<b>LIGHTWEIGHT FRAMING:</b>		
051 230-0200	For steel studs see division 092-612		
051 230-1300	Cross bracing rods, 19 mm diameter (Plain rod)	LM	12.10
051 230-1320	Cross bracing rods, 25 mm diameter (Plain rod)	LM	143.00
051 230-1330	Steel angle, 120 x 120 x 8 mm, 14.7 kgs/mt, 6 Mtr. Long	EA	233.00
051 230-1350	Steel angle, 120 x 120 x 10 mm x 6 m, 18.20 kgs/mt, 6 Mtr. Long	EA	290.00
<b>051 232</b>	<b>LINTELS :</b>		
051 232-0010	Plain steel angles	KG	48.33
051 232-2700	Steel angles, 100 mm x 75 mm, 9.35kg/m, 7 mm thick, 6 m long	EA	34.59
<b>051 234</b>	<b>PLATES:</b>		
051 234-0100	Struct. steel plate, 2 m x 6 m x 6 mm to 50 mm thick	MET.TON	3,200.00
<b>051 238</b>	<b>SPACE FRAME:</b>		
051 238-0010	Steel 1.2 m modular, 12 m spans, supported on boundary frames, total imposed load 100 kg/m2	SQM	655.00



## DIVISION 5 : METALS

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
051 238-0400	Steel 1.5 m modular, 12 m spans, supported on boundary frames, total imposed load 100 kg/m <sup>2</sup>	SQM	563.50
<b>051 250</b>	<b>STRUCTURAL STEEL MEMBERS:</b>		
051 250-0100	Structural steel members common wide flange sizes, spans W 152 x 15 thru W 762 x 147 kgs/Mt	MET.TON	3,250.00
051 250-0900	Structural steel members wide flange sizes, span 15m, per SQM	"	3,250.00
<b>051 255</b>	<b>STRUCTURAL STEEL PROJECTS <i>Bolted, unless mentioned otherwise:</i></b>		
051 255-0131	Prefabricated industrial 1 storey building, including wall panels & roof; steel bearing, & girders 1:12, pitched roof, rectangular shape length to width 3:1 area 6075 SQM; eve height 6.5M, building width 45 M	SQM	170.00
051 255-0132	Prefabricated industrial 1 storey building, including wall panels & roof; steel bearing, & girders 1:12, pitched roof, rectangular shape length to width 5:1 area 6075 SQM; eve height 6.5M, building width 34.8 M		160.00
051 255-0133	Prefabricated industrial building, warehouse rectangular, with inside court, including all wall panels & roof, steel bearing, beam & girder; Building dimensions 150 x 160 m; Inside court dimensions 50 m x 20m, eve height 4.8m, roof pitch 1:12		300.00
<b>051 275</b>	<b>VIBRATION PADS:</b>		
051 275-0700	Neoprene bearing pads, 25 mm thick	SQM	1,183.60
051 275-1000	Neoprene bearing pads, fabric reinforced, 35 Mpa, 25 mm thick		1,183.60
051 275-1200	Felt surfaced vinyl pads, cork and sisal, 25 mm thick		1,703.90
<b>051 400</b>	<b>STRUCTURAL ALUMINIUM:</b>		
<b>051 404</b>	<b>ALUMINIUM:</b>		
051 404-0010	Aluminium structural profile, 70 mm x 70 mm section, powder coating finish	LM	110.00
051 404-0100	Aluminium structural profile, 70 mm x 160 mm section, powder coating finish		198.00
051 404-0110	Aluminium structural profile, 70 mm x 240 mm section, powder coating finish		275.00
051 404-0120	Aluminium extrusion, powder coating, 6 meter length	TON	16,720.00
<b>051 500</b>	<b>STEEL WIRE ROPE:</b>		
<b>051 508</b>	<b>WIRE ROPE:</b>		
051 508-0050	Wire rope, steel core 12 mm dia.	LM	10.35
051 508-0100	Wire rope, steel core 22 mm dia.	"	34.50
<b>052</b>	<b>METAL JOISTS</b>		
<b>052 100</b>	<b>STEEL JOISTS:</b>		
<b>052 108</b>	<b>LIGHTGAUGE JOISTS:</b>		
052 108-0900	Lightgauge Joists Punched, double nailable, 300 mm deep, 12 ga.	LM	34.43
<b>052 110</b>	<b>OPEN WEB JOISTS:</b>		
052 110-0010	Open web joists, horizontal bridging	MET. TON	4,053.00
<b>053</b>	<b>METAL DECKING</b>		
<b>053 100</b>	<b>STEEL DECK:</b>		
<b>053 104</b>	<b>METAL DECKING:</b>		
053 104-0200	Metal Decking, steel floor panels, Cellular units galvanized, 50 mm deep, 20-20 gauge	SQM	92.33
053 104-0300	Metal Decking, steel floor panels, Cellular units galvanized, 50 mm deep, 18-18 gauge	SQM	120.40
053 104-2100	Metal Decking, steel floor panels, open type, galv., 38 mm deep, 22 ga		28.75
053 104-3050	Metal Decking, steel floor panels, open type, galv., 38 mm deep, 16 ga		54.30
053 104-3500	Metal Decking, steel floor panels, open type, galv., 76 mm deep, 16 ga		65.32



## DIVISION 5 : METALS

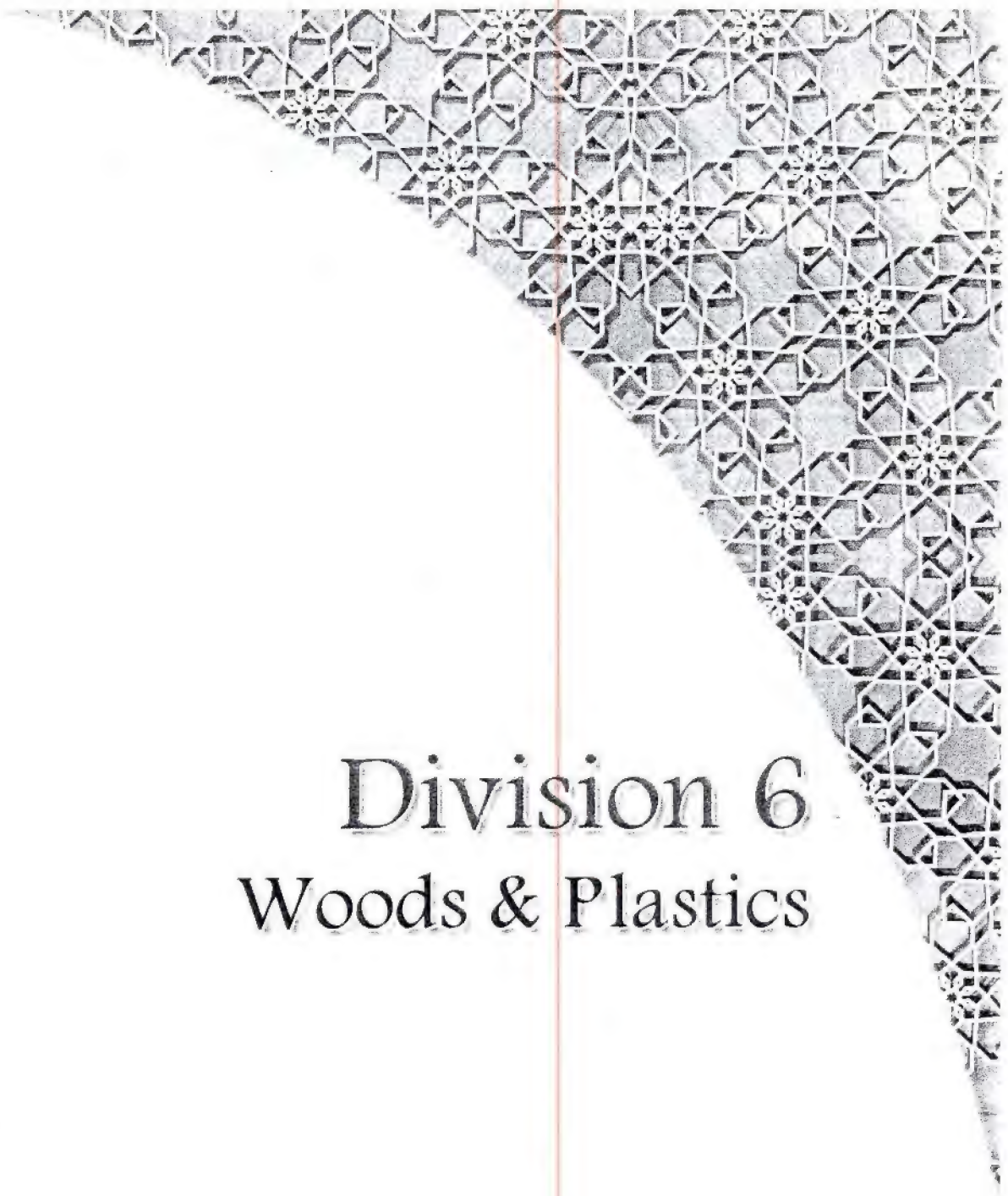
CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
053 104-3900	Metal Decking,steel floor panels,open type,galt.,114 mm deep,16 ga		107.20
053 104-4500	Metal Decking,steel floor panels,open type,galt.,190 mm deep,18 ga		128.60
053 104-4700	Metal Decking,steel floor panels,open type,galt.,190 mm deep,14 ga		178.90
053 104-5500	Metal Decking,steel floor panels,Non-cellular composite deck,galt., 50 mm deep,16 ga.		54.75
053 104-6000	Metal Decking,steel floor panels,Non-cellular composite deck,galt., 76 mm deep,16 ga.		60.05
<b>055 METAL FABRICATION</b>			
<b>055 100 METAL STAIRS:</b>			
<b>055 104 STAIRS:</b>			
055 104-0100	Stair Steel,safety nosing,steel stringers,grating tread and pipe railing 1.2 m wide	RISER	294.64
055 104-0400	Stair Steel,safety nosing,steel stringers,Cast iron tread and pipe rail		589.20
055 104-0500	Stair Steel,safety nosing,steel stringers,checkered plate tread,industrial, 1.1 m wide		324.45
055 104-1815	Stair spiral,aluminum,1.5 m diameter	RISER	775.15
<b>055 150 LADDERS:</b>			
<b>055 158 LADDER:</b>			
055 158-0100	Ladder,steel, suitable for bolting to concrete,without cage	LM	267.37
055 158-0400	Ladder,steel, suitable for bolting to concrete,with cage	"	546.25
<b>055 200 HANDRAILS &amp; RAILINGS:</b>			
<b>055 202 BUMPER RAILS:</b>			
055 202-0010	Bumper rails for garages, 12 ga.rail,150mm wide,with steel posts 3.8 mm O.C., average	LM	174.80
<b>055 203 RAILING,PIPE:</b>			
055 203-0010	Prefabricated Aluminium handrail, 2 pipes @ 50mm dia.	LM	747.50
055 203-0040	Prefabricated Aluminium handrail, 2 pipes @ 75mm dia.		920.00
055 203-0900	Prefabricated Aluminium wall guard, 1 pipe @ 50 mm		575.00
055 203-0910	Prefabricated Aluminium wall guard, 1 pipe @ 75 mm		747.50
<b>055 206 RAILINGS,INDUSTRIAL:</b>			
055 206-0500	Railings,industrial welded, 2 rail,1.1m high, 50 mm pipe, curved	LM	357.00
<b>055 208 RAILINGS,ORNAMENTAL:</b>			
055 208-0010	Railings,Ornamental Aluminium,average	LM	2,761.20
055 208-0400	Railings,Ornamental Hand-forged wrought iron,average	"	6,810.30
<b>055 300 GRATINGS &amp; FLOOR PLATES:</b>			
<b>055 302 CHECKERED PLATE:</b>			
055 302-0010	Checkered plate 6 mm to 10 mm, 238 Kg/1220mm x 2440mm	KG	3.20
055 302-0500	Checkered plate platforms, 6 mm plate, no handrails,rectangular		2.03
055 302-0600	Checkered plate platforms, 6 mm plate, no handrails,circular		2.34
<b>055 304 FLOOR GRATING,ALUMINIUM:</b>			
055 304-1700	Floor Grating, Aluminium,Heavy duty,all extruded panels, 32 mm deep,12.1 kg/m2	SQM	2.08
055 304-1900	Floor Grating, Aluminium,Heavy duty,all extruded panels, 57 mm deep, 29.4 kg/m2		428.95
055 304-2400	Floor Grating, close spaced aluminium grating with vinyl tread inserts		660.10
055 304-3000	Floor Grating,Stainless Steel,close spaced with vinyl inserts.		1,121.68
<b>055 310 FLOOR GRATING PLANKS:</b>			
055 310-0300	Floor Grating Planks Galvanized steel, 241 mm wide 14 ga.,100 mm rib	LM	4,790.00



## DIVISION 5 : METALS

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
055 310-0800	Floor Grating Planks stainless steel type 304, 16 ga., 50 mm rib	LM	80.80
<b>055 314</b>	<b>GRATING FRAME:</b>		
055 314-0100	Grating frame Aluminium,for gratings 40 mm deep	EA	253.00
<b>055 370</b>	<b>TRENCH COVER:</b>		
055 370-0020	Trench cover cast iron grating with bar stops and angle frame	LM	62.10
055 370-0150	Trench cover frame only (both sides of trench), 50 mm grating	"	523.20
<b>055 400</b>	<b>CASTINGS</b>		
<b>055 404</b>	<b>CONSTRUCTION CASTINGS:</b>		
055 404-0100	Column bases,cast iron, 400 mm x 400 mm, approx. 30 kg	EA	135.24
055 404-0200	Column bases,cast iron, 810 mm x 810 mm, approx. 115 kg		130.00
055 404-0500	Column bases,cast aluminium 300 mm x 300 mm	↓	195.00
<b>055 500</b>	<b>METAL SPECIALTIES</b>		
<b>055 504</b>	<b>LAMP POSTS:</b>		
055 504-0010	Lamp Posts, 2.1 m high,aluminium	EA	287.50
055 504-0100	Lamp Posts, 2.1 m high,mild steel, plain	"	115.40
<b>055 508</b>	<b>WINDOW GUARDS:</b>		
055 508-0070	Window guard,steel,w/steel angle frame,steel bars 13 mm x 13 mm,spaced,130 mm O.C.,projected type	SQM	195.00
055 508-0500	Window Guards,Woven wire units, 10 mm chan. frame, 1.2 m x 1.8 m	OPENING	364.00
<b>058</b>	<b>EXPANSION CONTROL</b>		
<b>058 100</b>	<b>EXP. COVER ASSEMBLIES:</b>		
<b>058 104</b>	<b>EXPANSION JOINT ASSEMBLIES Custom Units:</b>		
058 104-0200	Floor cover assemblies, 25 mm space,aluminium	LM	65.00
058 104-0300	Floor cover assemblies, 25 mm space,bronze or stainless steel		185.00
058 104-0500	Floor cover assemblies, 50 mm space,aluminium		150.00
058 104-0600	Floor cover assemblies, 50 mm space,bronze or stainless steel		230.00
058 104-0800	Wall and ceiling assemblies, 25 mm space, aluminium		65.00
058 104-1200	Wall and ceiling assemblies, 50 mm space, bronze or stainless steel		210.00
058 104-1400	Floor to wall assemblies, 25 mm space,aluminium		70.00
058 104-1500	Floor to wall assemblies, 25 mm space,bronze or stainless steel		195.00
058 104-1700	Gym floor angle covers,aluminium, 76 mm x 76 mm angle		40.00
058 104-2000	Roof closures,aluminium, 25 mm space, flat roof,low profile		402.50
058 104-2300	Roof closures,Roof to wall, aluminium, 25 mm space,low profile	↓	431.25



A decorative geometric pattern, possibly a woodcut or metalwork design, featuring a complex interlocking star and polygon motif. The pattern is rendered in a light gray tone against a white background, forming a triangular shape that points towards the bottom right corner of the page.

# Division 6

## Woods & Plastics

## DIVISION 6 : WOOD & PLASTICS

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
<b>060</b>	<b>FASTNERS &amp; ADHESIVES</b>		
<b>060 500</b>	<b>FASTNERS &amp; ADHESIVES</b>		
<b>060 512</b>	<b>TIMBER CONNECTORS:</b>		
060 512-0010	Connector plates,steel,with bolts,straight	EA	49.30
060 512-0100	Connector plates,steel,with bolts, TEE shape.		74.20
060 512-4700	Strap ties,16 ga., 35 mm wide, 305 mm long	↓	3.16
060 512-6101	Beam hangers,bolted,,polymer painted, 83 mm wide, 230 mm high, 300 mm long,top flange	100 PCS.	20,683.60
060 512-6110	Beam hangers bolted,polymer painted, 175 mm wide, 230 mm high, 300 mm long,top flange		22,190.00
060 512-6204	Beam & purlin hangers,galvanized,12 ga. for purlin/joists 76 mm x 250 mm		2,409.25
060 512-6216	Beam & purlin hangers,galvanized,12 ga. for purlin/joists 100 mm x 300 mm		2,688.70
060 512-6594	Joist hanger heavy duty galvanized, 12 ga., 50 mm x 150 mm		2,605.90
060 512-6598	Joist hanger heavy duty galvanized, 12 ga., 50 mm x 250 mm	↓	2,952.05
<b>061</b>	<b>ROUGH CARPENTRY</b>		
<b>061 100</b>	<b>WOOD FRAMING</b>		
<b>061 101</b>	<b>FRAMING MEMBERS:</b>		
061 101-0100	Wood framing member 25 mm x 25 mm	LM	32.07
061 101-0150	Wood framing member 25 mm x 50 mm		36.53
061 101-0200	Wood framing member 25 mm x 75 mm		40.48
061 101-0250	Wood framing member 25 mm x 100 mm		47.68
061 101-0300	Wood framing member 50 mm x 75 mm		62.20
061 101-0350	Wood framing member 50 mm x 100 mm		70.70
061 101-0400	Wood framing member 50mm x 150mm		99.25
061 101-0450	Wood framing member 50 mm x 200 mm		122.00
061 101-0500	Wood framing member 50 mm x 250 mm		155.25
061 101-0550	Wood framing member 50 mm x 300 mm		93.15
061 101-0600	Wood framing member 50 mm x 350 mm		104.70
061 101-0650	Wood framing member 75 mm x 150 mm		135.70
061 101-0700	Wood framing member 75 mm x 200 mm		161.00
061 101-0750	Wood framing member 75 mm x 250 mm		197.80
061 101-0800	Wood framing member 75mm x 300mm		178.40
061 101-0850	Wood framing member 75 mm x 350 mm		197.00
061 101-0900	Wood framing member 100 mm x 150 mm		147.45
061 101-0950	Wood framing member 100 mm x 200 mm		166.75
061 101-1000	Wood framing member 100 mm x 250 mm		79.35
061 101-1100	Wood framing member 100 mm x 300 mm		223.70
061 101-1150	Wood framing member 100 mm x 350 mm	↓	248.40
<b>061 118</b>	<b>FRAMING,COLUMNS:</b>		
061 118-0400	Framing columns 100 mm x 100 mm	CUM	12,201.70
061 118-0420	Framing columns 100 mm x 150 mm		11,714.68
061 118-0440	Framing columns 100 mm x 200 mm	↓	10,081.95
061 118-0450	Framing columns 150 mm x 150 mm		10,293.60
061 118-0480	Framing columns 150 mm x 200 mm	CUM	9,854.50
061 118-0500	Framing columns 150 mm x 250 mm	CUM	9,188.50



## DIVISION 6 : WOOD & PLASTICS

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
<b>061 138</b>	<b>PARTITIONS: <i>Wood stud with single bottom</i></b>		
061 138-0400	Partitions, wood stud with bottom plate & double top plate, 50 mm x 100 mm, 3 m high, stud 400 mm O.C.	LM	517.50
061 138-1000	Partitions, wood stud with bottom plate & double top plate, 50 mm x 150 mm, 2.45 m high, stud 400 mm O.C.		488.75
061 138-1205	Partitions, wood stud with bottom plate & double top plate, 50 mm x 150 mm, 3.65 m high, stud 400 mm O.C., pneumatic nailed	↓	632.00
<b>061 150</b>	<b>SHEATHING:</b>		
<b>061 154</b>	<b>SHEATHING:</b>		
061 154-0030	Plywood, CDX 8 mm thick	SQM	12.00
061 154-0055	Plywood, CDX 10 mm thick, pneumatic nailed		12.50
061 154-0100	Plywood, CDX 13 mm thick, pneumatic nailed		16.00
061 154-0200	Plywood, CDX 16 mm thick, pneumatic nailed		18.80
061 154-0305	Plywood, CDX 20 mm thick, pneumatic nailed		23.75
061 154-2400	Wall boards 25 mm x 150 mm	↓	35.13
061 154-2700	Wall boards 25 mm x 200 mm	SQM	36.60
061 154-2850	Wall board, gypsum, weatherproof, 13 mm thick		13.00
061 154-3000	Wall board, wood fiber, 13 mm thick		12.00
061 154-3100	Wall board, wood fiber, 16 mm thick		15.50
061 154-3800	Board, wood fiber, Asphalt impregnated, 20 mm thick	↓	12.00
<b>061 160</b>	<b>SUBFLOOR:</b>		
<b>061 164</b>	<b>SUBFLOOR:</b>		
061 164-1100	Subfloor, wood fiber tongue & groove, 600 x 2450 mm planks, 25 mm thick	SQM	40.00
<b>061 168</b>	<b>SUBFLOOR UNDERLAYMENT:</b>		
061 168-0015	Underlayment, plywood grade, 10 mm thick	SQM	46.00
061 168-0100	Underlayment, plywood grade, 13 mm thick		69.00
061 168-0200	Underlayment, plywood grade, 16 mm thick		103.50
061 168-0600	Underlayment, particle board, 13 mm thick		11.70
061 168-0800	Underlayment, particle board, 16 mm thick		12.42
061 168-0900	Underlayment, particle board, 20 mm thick		14.54
061 168-1100	Underlayment, hardboard, 1225 mm x 1225 mm, 5 mm thick	↓	14.77
<b>061 250</b>	<b>WOOD DECKING</b>		
<b>061 258</b>	<b>ROOF DECKS:</b>		
061 258-0400	Roof decks, cedar planks, 75 mm thick	SQM	178.25
061 258-0500	Roof decks, cedar planks, 100 mm thick		239.20
061 258-0800	Roof decks, douglas fir, 100 mm thick	↓	690.00
<b>061 259</b>	<b>DECK, WOOD, PRESSURE TREATED LUMBER:</b>		
061 259-0100	Pressure treated lumber railings and trim, 25 mm x 100 mm	LM	57.50
061 259-0300	Pressure treated lumber railings and trim, 50 mm x 150 mm	"	115.00
061 259-0400	Pressure treated decking, 25 mm x 100 mm	SQM	575.00
061 259-0600	Pressure treated decking, 50 mm x 150 mm	"	747.00
<b>061 280</b>	<b>MINERAL FIBER CEMENT PANELS</b>		
<b>061 281</b>	<b>MINERAL FIBER CEMENT PANELS: <i>Including panels, fasteners, accessories, trim &amp; sealant</i></b>		
061 281-0150	Mineral fiber cement panels, architectural, textured finish, 6 mm thick	SQM	218.40
061 281-0250	Mineral fiber cement panels, architectural, textured finish, 10 mm thick	SQM	289.17



## DIVISION 6 : WOOD & PLASTICS

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
061 281-0350	Mineral fiber cement panels, architectural, textured finish, 16 mm thick	SQM	379.57
061 281-2100	Mineral fiber cement panels, flat sheets 6 mm thick	SQM	187.95
061 281-2200	Mineral fiber cement panels, flat sheets 10 mm thick	SQM	236.00
<b>061 800</b>	<b>GLUED LAMINATED CONST.</b>		
<b>061 808</b>	<b>LAMINATED ROOF DECK:</b>		
061 808-0100	Laminated roof deck pine, 100 mm thick	SQM	120.40
061 808-0300	Laminated roof deck cedar, 100 mm thick	..	166.60
<b>062</b>	<b>FINISH CARPENTRY</b>		
<b>062 200</b>	<b>MILLWORK MOLDINGS</b>		
<b>062 208</b>	<b>MOLDINGS, BASE:</b>		
062 208-0500	Molding base, pine, 14 mm x 90 mm	LM	28.75
062 208-0550	Molding base, pine, 14 mm x 110 mm	..	32.20
<b>062 212</b>	<b>MOLDING, CASINGS:</b>		
062 212-0750	Molded pine casing, 17 mm x 90 mm	LM	215.00
<b>062 216</b>	<b>MOLDING, CEILINGS:</b>		
062 216-1200	Cornice molding, pine, 14 mm x 44 mm	LM	20.70
062 216-2600	Crown molding, pine, 14 mm x 90 mm	LM	23.00
<b>062 220</b>	<b>MOLDINGS, EXTERIOR:</b>		
062 220-1500	Moldings exterior, cornice, boards, pine, 25 mm x 50 mm	LM	40.25
062 220-2000	Molding exterior, cornice, boards, pine, 25 mm x 300 mm	..	258.75
<b>062 224</b>	<b>MOLDINGS, TRIM:</b>		
062 224-0800	Chair rail, 16 mm x 64 mm	LM	23.00
062 224-1000	Closet pole, Pine, 30 mm diameter		46.00
062 224-1100	Closet pole, Fir, 40 mm diameter		87.50
062 224-3800	Molding trim miscellaneous, Cedar, 25 mm x 25 mm		13.80
062 224-4100	Molding trim miscellaneous, oak, 25 mm x 25 mm		28.75
062 224-4400	Molding trim miscellaneous, walnut, nominal 25 mm x 25 mm	↓	42.55
062 224-4700	Molding trim miscellaneous, teak, nominal 25 mm x 25 mm	LM	25.30
062 224-4800	Molding trim miscellaneous, teak, nominal 25 mm x 75 mm	"	34.50
<b>062 228</b>	<b>MOLDINGS, WINDOW AND DOOR</b>		
062 228-3200	Glass bead, pine 6 mm x 17 mm	LM	16.50
062 228-5300	Threshold, inside, oak, 914 mm long, 16 mm x 90 mm	EA	28.75
062 228-5400	Threshold, outside, oak, 914 mm long, 38 mm x 200 mm	..	86.25
<b>062 300</b>	<b>SHELVING</b>		
<b>062 304</b>	<b>SHELVING:</b>		
062 304-0200	Shelving, pine, no edge band, 25 mm x 300 mm	LM	103.50
062 304-0600	Shelving, plywood, 20 mm thick with lumber edge, 300 mm wide		86.25
062 304-0700	Shelving, plywood, 20 mm thick with lumber edge, 600 mm wide	↓	138.00
062 304-1500	Prefinished shelves with supports, 200 mm wide, pine	LM	86.25
<b>062 408</b>	<b>COUNTER TOP:</b>		
062 408-0100	Counter Top, plastic laminated, 600 mm wide w/backsplash, Average	LM	402.50
062 408-0120	Laminated plastic on 19 mm thick particle board.	SQM	172.50
062 408-0140	Laminated plastic on 19 mm thick hardwood board.	SQM	211.25
062 408-1300	Counter top stainless channel edge, 22 mm thick	LM	517.50
062 408-2700	Counter top marble, 600 mm wide, with splash, 13 mm thick, Average	"	402.50



## DIVISION 6 : WOOD & PLASTICS

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
062 408-3200	Counter top, 600 mm wide, stainless steel	SQM	460.00
062 408-3600	Table top,plastic laminate,square edge, 22 mm thick	"	373.75
<b>062 500</b>	<b>PREFIN. WOOD PANELING:</b>		
<b>062 504</b>	<b>PANELING, PLYWOOD:</b>		
062 504-2400	Plywood 19 mm, prefinished 6 mm thick, 1.2 m x 2.4 m sheets with vertical grooves, Birch faced, Average	SQM	143.75
062 504-2600	Plywood 19 mm, prefinished 6 mm thick, 1.2 m x 2.4 m sheets,faced Mahogany, African	↓	143.75
062 504-2700	Plywood 19 mm, prefinished 6 mm thick, 1.2 m x 2.4 m sheets,faced Philippine (Lauan),average	SQM	110.08
062 504-2900	Plywood 19 mm, prefinished 6 mm thick, 1.2 m x 2.4m sheets,faced oak,average		127.70
062 504-2950	Plywood 19 mm, prefinished 6 mm thick, 1.2 m x 2.4m sheets,faced cherry,average		135.76
062 504-3200	Plywood 19 mm, prefinished 6 mm thick, 1.2 m x 2.4m sheets,faced rosewood		147.74
062 504-3400	Plywood 19 mm, prefinished 6 mm thick, 1.2 m x 2.4 m sheets,faced teak		135.76
062 504-3600	Plywood 19 mm, prefinished 6 mm thick, 1.2 m x 2.4 m sheets,faced chestnut		143.75
062 504-3800	Plywood 19 mm, prefinished 6 mm thick, 1220 mm x 2.4 m sheets,faced pecan		110.08
062 504-3900	Plywood 19 mm, prefinished 6 mm thick, 1.2 m x 2.4 m sheets,faced walnut, Average	↓	110.08
<b>062 550</b>	<b>PREFIN. HARDBOARD PANEL:</b>		
<b>062 554</b>	<b>PANELING, HARDBOARD:</b>		
062 554-0050	Prefinished, hardboard tempered, 6 mm thick	SQM	138.00
062 554-0400	Prefinished,tempered pegboard (with holes for attaching hooks); 6 mm thick		138.00
062 554-1200	Prefinished plastic faced hardboard, 3 mm thick	↓	109.25
<b>062 600</b>	<b>BOARD PANELING</b>		
<b>062 604</b>	<b>PANELING, BOARDS:</b>		
062 604-6400	Wood board paneling,pine, 20 mm x 100 mm	SQM	287.00
062 604-6500	Wood board paneling,cedar, 20 mm x 100 mm		287.50
062 604-6700	Wood board paneling,redwood clear, 25 mm x 100 mm	↓	115.00
<b>062 700</b>	<b>MISC. FINISH CARPENTRY</b>		
<b>062 704</b>	<b>BEAMS,DECORATIVE:</b>		
062 704-0050	Beams decorative,rough sawn cedar,100 mm x 100 mm	LM	138.00
062 704-0100	Beams decorative,rough sawn cedar,100 mm x 150 mm	"	143.75
<b>062 730</b>	<b>GRILLES:</b>		
062 730-0300	Grilles and Panels, hardwood, sanded. 1.2 m x 2.4 m, custom, prefinished, average	SQM	172.50
<b>062 740</b>	<b>LOUVERS:</b>		
062 740-0020	Louver,redwood,full circle, 600 mm diameter	EA	296.70
062 740-0100	Louver,redwood,half circle, 600 mm diameter	EA	280.60
<b>062 750</b>	<b>SHUTTERS, EXTERIOR:</b>		
062 750-0100	Shutters fixed, exteriors, aluminum louvered, w/alumin. frame 450 mm wide, 1.4m long.	SQM	828.00
062 750-0100	Shutters, exteriors, aluminum louvered, w/alumin. frame ,motor operated, 1.0 m x1.6 m	EA	2,012.50
062 750-1500	Shutters fixed, exteriors, pine louvered, primed w/pine frame 450 mm wide, 1.4 m long.	SQM	632.50
062 750-4500	Shutters fixed, exterior,Polystrene, louvered w/frame, 356 mm wide, 0.9 m long		575.00
062 750-6000	Shutters fixed, exteriors, Vinyl louvered w/frame, 450 mm x 1.4 m long	↓	460.00



## DIVISION 6 : WOOD & PLASTICS

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
<b>063</b>	<b>WOOD TREATMENT</b>		
<b>063 100</b>	<b>PRESERVATIVE TREATMENT</b>		
<b>063 104</b>	<b>PLYWOOD TREATMENT:</b>		
063 104-0030	Plywood, fire retardant, kiln dried after treatment 10 mm thick	SQM	86.25
063 104-0100	Plywood, fire retardant, kiln dried after treatment 19 mm thick		172.50
063 104-0530	Plywood, salt treated kiln dried after treatment, 10 mm thick		80.50
063 104-0570	Plywood, salt treated kiln dried after treatment, 16 mm thick		143.75
<b>064</b>	<b>ARCHITECTURAL WOODWORK</b>		
<b>064 100</b>	<b>CUSTOM CASEWORK</b>		
<b>064 102</b>	<b>CABINETS:</b>		
064 102-0010	Corner China cabinets, pine, 2 m high, prefinished, average	LM	1,380.00
064 102-0300	Cabinets with built-in drawer units, pine, 457 mm deep, 810 mm high, prefinished average		1,380.00
064 102-0840	Kitchen base cabinets, hardwood, not incl. counter tops, 610 mm deep, 890 mm high, prefinished, with one top drawer, one door below, 450 mm wide.	EA	805.00
064 102-0880	Kitchen base cabinets, hardwood, not incl. counter tops, 610 mm deep, 890 mm high, prefinished, with one top drawer, one door below, 600 mm wide.		920.00
064 102-1000	Kitchen base cabinets, hardwood, not incl. counter tops, 610 mm deep, 890 mm high, prefinished, with four drawers, 300 mm wide		1,035.00
064 102-1060	Kitchen base cabinets, hardwood, not incl. counter tops, 610 mm deep, 890 mm high, prefinished, with four drawers, 600 mm wide		1,207.50
064 102-1260	Kitchen base cabinets, hardwood, not incl. counter tops, 610 mm deep, 890 mm high, prefinished, with two top drawers, two doors below, 910 mm wide.		1,380.00
064 102-1300	Kitchen base cabinets, hardwood, not incl. counter tops, 610 mm deep, 890 mm high, prefinished, with two top drawers, two doors below, 1.2 m wide.		1,610.00
064 102-1500	Kitchen base cabinets, prefinished, with two doors below, for range or sink, 760 mm wide		402.50
064 102-1580	Kitchen base cabinets, prefinished, with two doors below, for range or sink, 1.2 m wide		575.00
064 102-2000	Corner base cabinet, hardwood, not including countertops, 2 top drawers, 2 doors, 890 mm H, 910 mm wide, prefinished.		920.00
064 102-4000	Kitchen wall cabinets, hardwood, prefinished, 300 mm deep; 300 mm high with two doors, 760 mm wide.		517.50
064 102-4100	Kitchen wall cabinets, hardwood, prefinished, 300 mm deep; 300 mm high with two doors, 910 mm wide.		690.00
064 102-4050	Kitchen wall cabinets, hardwood, prefinished, 300 mm deep; 380 mm high with two doors, 760 mm wide		517.50
064 102-4720	Kitchen wall cabinets, hardwood, prefinished, 300 mm deep; 610 mm high with two doors, 910 mm wide.		805.00
064 102-5000	Kitchen wall cabinets, hardwood, prefinished, 300 mm deep; 760 mm high with one door, 300 mm wide		575.00
064 102-5040	Kitchen wall cabinets, hardwood, prefinished, 300 mm deep; 760 mm high with one door, 450 mm wide		632.50
064 102-5300	Kitchen wall cabinets, hardwood, prefinished, 300 mm deep; 760 mm high with two doors, 685 mm wide		690.00
064 102-5340	Kitchen wall cabinets, hardwood, prefinished, 300 mm deep; 760 mm high with two doors, 910 mm wide	EA	747.50
064 102-6000	Corner wall cabinet, hardwood, prefinished, 760 mm high, 600 mm wide, 1 door		575.00
064 102-6100	Corner wall cabinet, hardwood, prefinished, 760 mm high, 900 mm wide, 2 doors		690.00



## DIVISION 6 : WOOD & PLASTICS

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
064 102-7000	Broom cabinet, 2.1m high, 610 mm deep, 460 mm wide		1,380.00
064 102-7500	Kitchen cabinet for 2 built-in ovens, 1 door below ovens, 1 door above ovens, 2.1m high, 610 mm deep, 685 mm wide		920.00
064 102-7550	Kitchen cabinet for 1 oven, 1 door and with top provision for hood installation, 1.4 m high, 600 mm deep, 685 mm wide	↓	805.00
064 102-9610	For metal cabinets see division 123501		
<b>064 106</b>	<b>CABINET DOORS</b>		
064 106-2600	Cabinet door, glass panel, hardwood frame 300 mm wide, 760 mm high	EA	172.50
064 106-5000	Cabinet door, hardwood, raised panel, 300 mm wide, 457 mm high		345.00
064 106-5600	Cabinet door, hardwood, raised panel, 300 mm wide, 760 mm high		460.00
064 106-6000	Cabinet door, plastic laminate on particleboard, 300 mm wide, 760 mm high		172.50
064 106-6500	Cabinet door, plastic laminate on particleboard, 457 mm wide, 760 mm high	↓	172.50
<b>064 108</b>	<b>CABINET HARDWARE</b>		
064 108-1000	Cabinet catches, Average	EA	8.00
064 108-2000	Cabinet door/drawer pulls, handles		10.00
064 108-2600	Cabinet door/drawer pulls, flush metal, average	↓	10.00
064 108-3000	Cabinet drawer tracks/glides, Average	PAIR	60.00
064 108-4000	Cabinet hinges, Average	"	10.00
<b>064 140</b>	<b>VANITIES</b>		
064 141-8050	Vanity bases, 2 doors, 760 mm high, 530mm deep, 760 mm wide, hardwood	EA	626.75
064 141-8100	Vanity bases, 2 doors, 760 mm high, 530 mm deep, 910 mm wide, hardwood		825.00
064 141-8150	Vanity bases, 2 doors, 760 mm high, 530 mm deep, 1.2 m wide, hardwood	↓	1,121.67
<b>064 300</b>	<b>STAIRWORK &amp; HANDRAILS</b>		
<b>064 306</b>	<b>STAIRS PREFABRICATED</b>		
064 306-0200	Box stairs, prefabricated 910 mm wide, oak treads, no handrails, 1.8 m high	EA	5,750.00
064 306-0400	Box stairs, prefabricated 910 mm wide, oak treads, no handrails, 2.45 m high		9,200.00
064 306-0900	Box stairs, prefabricated 910 mm wide, pine treads, no handrails, 2.45 m high		5,750.00
064 306-3400	Curved stairway, 990 mm wide, prefabricated Oak, finished, including balustrade system, open one side 2.75 m high	↓	17,250.00
064 306-3700	Curved stairway, 990 mm wide, prefabricated Oak, finished, including balustrade system open two sides 2.75 m high	EA	20,700.00
064 306-4400	Spiral Oak stair, finished, prefabricated 1.4m diameter, including railing, 2.75 m high.	"	28,750.00
<b>064 310</b>	<b>RAILING:</b>		
064 310-0400	Interior railing architectural grade, hardwood, with spindles 150 mm O.C., 5.5 m long	LM	230.00
<b>064 400</b>	<b>MISC. ORNAMENTAL ITEMS</b>		
<b>064 402</b>	<b>COLUMNS:</b>		
064 402-0300	Columns with base plate, Fir wood, hollow round, 200 mm diameter	LM	1,725.00
064 402-0350	Columns with base plate, Fir wood, hollow round, 250 mm diameter		2,012.50
064 402-0400	Column with base plate Fir wood, solid round 90 mm diameter, upto 2.4 m high		460.00
064 402-0600	Column with base plate Fir wood, solid round 140 mm diameter, upto 2.4 m high		1,035.00
064 402-0610	Column with base plate oak wood, solid round 140 mm diameter, upto 2.4 m high	↓	1,380.00
064 402-0900	Square column with base plate, 90 mm x 90 mm, solid, Fir wood	LM	690.00
064 402-1000	Square column with base plate & crown top, 127 mm x 127 mm solid oak	LM	920.00
064 402-4200	Posts, rough sawn cedar, 150 mm x 150 mm	LM	54.62

**DIVISION 6 : WOOD & PLASTICS**

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
<b>064 410</b>	<b>MILLWORK, HIGH DENSITY POLYMER</b>		
064 410-0100	Millwork, High density polymer base, 14 mm x 80 mm	LM	11.33
064 410-0400	Millwork, High density polymer, Chair rail, 16 mm x 80 mm		10.81
064 410-0500	Millwork, High density polymer, corner, inside, 13 mm x 29 mm		5.40
064 410-0700	Millwork, High density polymer, crown, 19 mm x 97 mm	▼	11.33



The background of the cover is a grayscale aerial photograph of a city, showing a grid of streets and various buildings. A large, white, curved shape, resembling a stylized 'C' or a protective shield, is positioned on the left side, partially obscuring the city view. In the top right corner, there is a dark gray area with a complex, repeating geometric pattern of interlocking lines and small floral motifs.

# Division 7

## Thermal & Moisture Protection



## DIVISION 7 : THERMAL & MOISTURE PROTECTION

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
<b>071</b>	<b>WATERPROOFING &amp; DAMPPROOFING</b>		
<b>071 100</b>	<b>SHEET WATERPROOFING:</b>		
<b>071 102</b>	<b>ELASTOMERIC WATERPROOFING:</b>		
071 102-0010	Elastomeric waterproofing, EPDM plain 0.8 mm thick	SQM	26.00
071 102-0020	Elastomeric waterproofing, PVC 0.8 mm thick		13.65
071 102-0100	Elastomeric waterproofing, EPDM plain 1.6 mm thick		37.00
071 102-0110	Elastomeric waterproofing, PVC 1.5 mm thick		23.10
071 102-0300	Elastomeric waterproofing, EPDM Nylon reinforced sheets upto 1.6 mm thick		46.00
071 102-0310	Elastomeric waterproofing, PVC reinforced sheets upto 1.6 mm thick	↓	24.00
071 102-0900	Adhesive for bonding or splicing	KG	47.50
071 102-1500	Elastomeric waterproofing, Neoprene nylon reinforced 1.6 mm	SQM	51.70
071 102-1510	Elastomeric waterproofing, PVC reinforced 1.5 mm		23.00
071 102-1800	Elastomeric waterproofing, Neoprene nylon reinforced, 3 mm thick		75.00
071 102-1810	Elastomeric waterproofing, PVC reinforced, 2 mm thick	↓	27.00
071 102-1900	Adhesive for splicing neoprene sheets	KG	47.00
071 102-2100	Elastomeric waterproofing, neoprene sheets, fiberglass reinforced, fluid applied 3 mm thick	SQM	47.00
071 102-2110	Elastomeric waterproofing, PVC reinforced sheet, fluid applied 1.5 mm thick		28.00
071 102-2200	Elastomeric waterproofing, Polythylene and rubberized asphalt sheets, 3 mm thick		19.50
071 102-2200	Waterproofing, asphaltic hardboard protection board, 3 mm thick		48.00
071 102-2210	Waterproofing, asphaltic hardboard protection board, 6 mm thick		55.00
071 102-2220	Elastomeric waterproofing, Polythylene and asphaltic hardboard protection board, 6 mm thick		18.20
071 102-2400	Elastomeric waterproofing, Polyvinyl chloride sheets, plain upto 0.76 mm thick	↓	13.20
071 102-3300	Elastomeric waterproofing, Bitumen modified polyurethane, fluid applied, 1 mm thick	LTR	19.20
<b>071 104</b>	<b>MEMBRANE WATERPROOFING:</b>		
071 104-0010	Membrane waterproofing, 1 ply, felt, 4 mm thick	SQM	9.00
071 104-0020	Membrane waterproofing, PVC, 1 mm thick		18.00
071 104-0100	Membrane waterproofing, 1 ply, glass fiber fabric, 4 mm thick		7.70
071 104-0110	Membrane waterproofing, PVC, 1 mm thick reinforced		19.50
071 104-0120	Membrane waterproofing, 3 mm thick reinforced with glass fiber		7.00
071 104-0130	Membrane waterproofing, 4 mm thick reinforced with glass fiber		7.50
071 104-0300	Membrane waterproofing, 2 ply, felt, 4 mm thick		9.80
071 104-0310	Membrane waterproofing, PVC, single layer, 1.2 mm thick		18.60
071 104-0600	Membrane waterproofing, 3 ply, felt		9.00
071 104-0610	Membrane waterproofing, PVC, single layer 1.5 mm thick		21.50
071 104-0700	Membrane waterproofing, 3 ply, glass fiber fabric, 4 mm thick		7.00
071 104-0710	Membrane waterproofing, PVC, 1.2 mm thick		19.00
071 104-1050	Expanded polystyrene, protection board, 10 mm thick, 24 kg/m3		9.85
071 104-1060	Expanded polystyrene, protection board, 13 mm thick, 24 kg/m3		9.85
071 104-1070	Membrane waterproofing, Fiberglass fabric, black mesh, 4 mm thick		8.00
071 104-1080	Membrane waterproofing, modified bitumen membrane reinforced with glass fiber 3 mm thick	↓	7.00



## DIVISION 7 :THERMAL & MOISTURE PROTECTION

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
071 104-1090	Membrane waterproofing, modified bitumen membrane reinforced with glass fiber 4 mm thick	SQM	8.00
071 104-1095	Membrane waterproofing, modified bitumen membrane reinforced with glass fiber 4 mm thick, aluminium face		9.00
071 104-1100	Membrane waterproofing,Fluid neoprene	↓	28.00
<b>071 300</b>	<b>BENTONITE WATERPROOFING</b>		
<b>071 301</b>	<b>BENTONITE:</b>		
071 301-0010	Bentonite panels, 1.2 m x 1.2 m, for walls, 5 mm thick	SQM	24.00
071 301-0100	Bentonite panels, 1.2 m x 1.2 m,under slabs, 16 mm thick	"	31.00
071 301-0300	Granular bentonite 20 kg bag	BAG	35.00
071 301-0500	Drain board,expanded polystyrene, 38 mm thick; with filter fabric	SQM	12.00
071 301-0675	Drain board,expanded polystyrene, 100 mm thick; with filter fabric	"	27.00
071 301-0700	Vapor retarder, see polyethylene,071-922	"	-
<b>071 600</b>	<b>BITUMINOUS DAMPPROOFING</b>		
<b>071 602</b>	<b>BITUMINOUS ASPHALT COATING:</b>		
071 602-0500	Asphalt coating with fibers (200 Ltr./Drum)	DRUM	576.00
071 602-4000	Protective board,asphalt coated,in mastic, 6 mm thick	SQM	10.50
<b>071 750</b>	<b>WATER REPELLENT COAT</b>		
<b>071 754</b>	<b>RUBBER COATING:</b>		
071 754-0010	Rubber coating,Water base liquid	LTR	4.00
071 754-0200	Silicone or stearate,sprayed on masonry	"	7.00
<b>071 920</b>	<b>VAPOR RETARDERS</b>		
<b>071 922</b>	<b>BUILDING PAPER:</b>		
071 922-0010	Building Paper,Aluminium and kraft laminated, foil 1 side	SQM	3.00
071 922-0300	Building Paper,Asphalt,two ply, 13.60 kg,for subfloors		3.20
071 922-0400	Asphalt felt sheathing paper, 6.80 kg	↓	1.00
071 922-0500	Building paper, Bonded Polypropylene, 0.9 m, wide, 34 m long roll	EA	98.00
071 922-0600	Building Paper,Polyethylene vapor barrier,standard 0.05 mm thick	SQM	0.20
071 922-0900	Building Paper,Polyethylene vapor barrier,standard 0.15 mm thick		0.80
071 922-1200	Building Paper,Polyethylene vapor barrier,standard 0.25 mm thick		1.10
071 922-1300	Building Paper,Polyethylene vapor barrier,clear reinforced,fire retardant, 0.20 mm thick		2.75
071 922-2400	Building Paper,Waterproofed kraft with sisal or fiberglass fibers, average	↓	3.10
<b>072</b>	<b>INSULATION &amp; FIREPROOFING</b>		
<b>072 109</b>	<b>PERIMETER INSULATION:</b>		
072 109-0600	Perimeter insulation, expanded polystyrene 25 mm thick, 0.7 M2. k/W	SQM	8.00
<b>072 110</b>	<b>POURED INSULATION:</b>		
072 110-0100	Poured insulation,Cellulose fiber	CU.M	43.00
072 110-0800	Poured insulation,Fiberglass wool	CU.M	34.20

## DIVISION 7 : THERMAL & MOISTURE PROTECTION

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
<b>072 111</b>	<b>REFLECTIVE:</b>		
072 111-0010	Reflective insulation,aluminium foil on 18 kg kraft,1 side,1.6 m2. k/W	SQM	1.60
<b>072 116</b>	<b>WALL INSULATION,RIGID:</b>		
072 116-0040	Wall insulation semi rigid,Fiberglass, 24 kg/m3,unfaced, 25 mm, 0.7 m2.k/W	SQM	7.00
072 116-0080	Wall insulation semi rigid,Fiberglass, 24 kg/m3, unfaced, 50 mm, 1.5 m2.k/W		9.60
072 116-0390	Wall insulation rigid,Fiberglass, 48 kg/m3, unfaced, 38 mm thick, 1.1 m2.k/W		15.20
072 116-0400	Wall insulation rigid,Fiberglass, 48 kg/m3, unfaced, 50 mm thick, 1.5 m2.k/W		17.00
072 116-0560	Wall insulation rigid,Fiberglass, 48 kg/m3, oil faced, 50 mm thick, 1.5 m2.k/W		18.20
072 116-0670	Wall insulation rigid,Fiberglass, 96 kg/m3, unfaced, 25 mm thick, 0.8 m2.k/W		19.75
072 116-0700	Wall insulation rigid,Fiberglass, 96 kg/m3, unfaced, 50 mm thick, 1.5 m2.k/W		40.00
072 116-0850	Wall insulation rigid,Fiberglass, 96 kg/m3, foil faced, 50 mm thick,1.5 m2.k/W		45.00
072 116-1500	Wall insulation rigid,Foamglass, 38 mm thick, 0.8 m2.k/W		42.00
072 116-1550	Wall insulation rigid,Foamglass, 77 mm thick,1.6 m2.k/W		55.00
072 116-1600	Wall insulation rigid,Isocyanurate,1.2m x 2.44 m sheet,foil faced,both sides, 13 mm thick, 0.7 m2.k/W		18.50
072 116-1640	Wall insulation rigid,Isocyanurate,1.2 m x 2.44 m sheet,foil faced,both sides, 25 mm thick,1.3 m2.k/W		27.00
072 116-1660	Wall insulation rigid,Isocyanurate,1.2 m x 2.44 m sheet,foil faced,both sides 50 mm thick, 2.5 m2 k/W		39.50
072 116-1750	Wall insulation rigid,Perlite, 50 mm thick, 1.0 m2.k/W		18.00
072 116-1940	Wall insulation rigid,Extruded polystyrene,1.75 kg/cm2, compressive strength, 50 mm thick, 1.76 m2.k/W		16.50
072 116-1960	Wall insulation rigid,Extruded polystyrene, 1.75 kg/cm2, compressive strength, 76 mm thick, 2.64 m2.k/W		25.00
<b>072 118</b>	<b>WALL OR CEILING INSUL.,NON-RIGID:</b>		
072 118-0060	Wall or ceiling insulation,non-rigid,Fiberglass,kraft faced,batts or blankets, 12Kg/m3 density, 100 mm thick, 200 mm through 600 mm wide, 10 M long	SQM	11.60
072 118-0140	Wall or ceiling insulation,non-rigid,Fiberglass,kraft faced,batts or blankets, 12Kg/m3 density, 150 mm thick, 200 mm through 600 mm wide, 10 M long		16.80
072 118-0200	Wall or ceiling insulation,non-rigid,Fiberglass,kraft faced,batts or blankets, 12Kg/m3 density, 230 mm thick, upto 600 mm wide, 10 M long		15.00
072 118-0260	Wall or ceiling insulation,non-rigid,Fiberglass,kraft faced,batts or blankets, 12Kg/m3 density, 300 mm thick, upto 600 mm wide, 10 M long		21.00
072 118-0480	Wall or ceiling insulation,non-rigid,Fiberglass,foil faced,batts or blankets, 12kg/m3 density, 150 mm thick, upto 600 mm wide, 10 M long		14.00
072 118-0500	Wall or ceiling insulation,non-rigid,Fiberglass,foil faced,batts or blankets, 12Kg/m3 density, 230 mm thick, upto 600 mm wide, 10 M long	SQM	17.00
072 118-0800	Wall or ceiling insulation,non-rigid,Fiberglass, unfaced,batts or blankets, 12Kg/m3, 100 mm thick, 200 mm through 600 mm wide, 10 M long		12.00
072 118-0860	Wall or ceiling insulation,non-rigid,Fiberglass, unfaced,batts or blankets, 12Kg/m3, 150 mm thick, 200 mm through 600 mm wide, 10 M long		15.85
072 118-0940	Wall or ceiling insulation,non-rigid,Fiberglass,unfaced,batts or blankets, 12Kg/m3 density, 300 mm thick, upto 600 mm wide, 10 M long		20.00



## DIVISION 7 : THERMAL & MOISTURE PROTECTION

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
072 118-1300	Wall or ceiling insulation,non-rigid,Mineral fiber batts,kraft faced, 12 Kg/m3 density, 90 mm thick		11.00
072 118-1380	Wall or ceiling insulation,non-rigid,Mineral fiber batts,kraft faced, 12Kg/m3 density, 250 mm thick		24.50
<b>072 200</b>	<b>ROOF &amp; DECK INSULATION</b>		
<b>072 203</b>	<b>ROOF DECK INSULATION:</b>		
072 203-0012	Roof deck insulation,basalt rock wool	KG	3.40
072 203-0030	Roof deck insulation,fiberboard low density, 25 mm thick, 0.49 m2.K/w	SQM	7.00
072 203-0100	Roof deck insulation,fiberboard low density, 50 mm thick, 0.98 m2.k/W		9.00
072 203-0120	Roof deck insulation,fiberboard high density, 25 mm thick, 0.44 m2.k/W		17.45
072 203-1900	Roof deck insulation,Extruded Polystyrene 1.05 kg/cm2 compressive strength, 50 mm thick,1.8 m2.k/W		16.55
072 203-1932	Roof deck insulation,Extruded Polystyrene 1.05 kg/cm2 compressive strength, 100 mm thick,1.8 m2.k/W		33.00
072 203-1960	Roof deck insulation,Extruded Polystyrene, 4.21 kg/cm2 compressive strength, 25 mm thick, 0.88 m2.k/W		9.00
072 203-1964	Roof deck insulation,Extruded Polystyrene, 4.21 kg/cm2 compressive strength, 76 mm thick, 2.64 m2.k/W		24.00
072 203-1966	Roof deck insulation,Extruded Polystyrene, 4.21 kg/cm2 compressive strength, 100 mm thick, 3.5 m2.k/W		33.00
072 203-1976	Roof deck insulation,Extruded Polystyrene, 8.08 kg/cm2 compressive strength, 100 mm thick, 3.5m2.k/W		40.00
<b>072 400</b>	<b>EXTERIOR INSULATION</b>		
<b>072 402</b>	<b>EXTERIOR INSULATION FINISH SYSTEM:</b>		
072 402-0220	Exterior insulation finish,prefabricated panels with hat channels 64 x 20 mm, 50 mm thick expanded polystyrene	SQM	89.00
072 402-0290	Exterior insulation finish,prefabricated panels with hat channels 64 x 20 mm,100 mm thick expanded polystyrene		98.00
072 402-0260	Exterior insulation finish,prefabricated panels, with 38 mm profile lightweight metal backing, 100 mm thick expanded polystyrene		109.00
<b>073</b>	<b>SHINGLES &amp; ROOFING TILES</b>		
<b>073 100</b>	<b>SHINGLES</b>		
<b>073 101</b>	<b>ALUMINUM SHINGLES</b>		
073 101-0100	Aluminum Shingles, 0.5 mm thick	SQM	44.50
073 101-0300	Aluminum Shingles, colored, 0.5 mm thick	"	48.20
<b>073 103</b>	<b>FIBER CEMENT:</b>		
073 103-0400	Fiber cement hexagonal shape, 400 mm x 400 mm	SQM	52.50
073 103-0500	Fiber cement square shape, 400 mm x 400 mm	"	47.00
<b>073 104</b>	<b>ASPHALT SHINGLES:</b>		
073 104-0250	Asphalt shingles,standard,laminated multi-layered shingles, 11.70 to 12.70 kg/m2	SQM	12.70

## DIVISION 7 :THERMAL & MOISTURE PROTECTION

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
073 104-0400	Asphalt shingles,premium,laminated multi-layered shingles, 12.70 to 14.65 kg/m2	"	18.00
<b>073 107</b>	<b>STEEL:</b>		
073 107-0010	Steel shingles,galvanized, 24 gauge	SQM	45.50
<b>073 108</b>	<b>WOOD:</b>		
<b>073 200</b>	<b>ROOFING TILE</b>		
<b>073 201</b>	<b>ALUMINUM:</b>		
073 201-0010	Aluminum tiles, 0.48 mm thick	SQM	112.00
<b>073 202</b>	<b>CLAY TILE:</b>		
073 202-0600	Roof covering,Clay tiles, severe weathering,smooth finish, colored	SQM	125.00
073 202-1100	Roof covering,Clay tiles, severe weathering,machine scored finish, colored	"	37.50
<b>073 204</b>	<b>CONCRETE TILE:</b>		
073 204-0020	Concrete tile,corrugated, 330 mm x 420 mm, 46 kg/m2 compressive strength	SQM	45.00
073 204-2200	Precast concrete tile 400 mm x 400 mm x 40 mm grey	SQM	15.67
<b>074</b>	<b>PREFORMED ROOFING &amp; SIDING</b>		
<b>074 100</b>	<b>PREFORMED PANELS</b>		
<b>074 104</b>	<b>FIBERGLASS:</b>		
074 104-0100	Fiberglass corrugated panels,roofing 3.66 kg/m2	SQM	69.00
074 104-0700	Fiberglass corrugated siding 3.66 kg/m2 fire retardant		97.50
074 104-1900	Fiberglass sandwich panels, 70 mm thick,panels	▼	379.00
<b>074 107</b>	<b>STEEL ROOFING:</b>		
074 107-0300	Steel roofing on steel frame,corrugated or ribbed,galt., 26 ga.	SQM	24.70
074 107-0400	Steel roofing,on steel frame,corrugated or ribbed,galt., 24 ga		29.70
074 107-0710	Steel roofing, on steel frame flat profile, 255 mm wide, 26 ga.		67.50
074 107-0750	Steel roofing on steel frame, flat profile, 300 mm wide, zinc aluminum alloy finish 24ga.		57.00
074 107-0870	Steel roofing,Flat profile, 420 mm wide, 22 ga.	▼	64.50
<b>074 200</b>	<b>COMPOSITE PANELS</b>		
<b>074 202</b>	<b>METAL FACING PANELS:</b>		
074 202-1200	Metal facing,Factory made sandwich wall panels,acryl.coated. 0.25 mm alum.face on 8 mm plywood core	SQM	103.00
074 202-2100	Factory made sandwich panel,insulated core,and with 28 ga porcelain hardboard core		230.00
074 202-2700	Sandwich panel,porcelain enamel on steel, 2 faces,laminated to hardboard core 6 mm thick		189.34
074 202-3100	Sandwich panel,porcelain enamel on steel, 2 faces,laminated to mineral fiber core, 6 mm thick	▼	145.00
<b>074 600</b>	<b>CLADDING/SIDING</b>		
<b>074 602</b>	<b>ALUMINUM SIDING:</b>		



## DIVISION 7 : THERMAL & MOISTURE PROTECTION

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
074 602-0010	Aluminum siding, 0.48 mm thick	SQM	19.00
074 602-2750	Aluminum siding, Ribbed, 76 mm profile, 1.27 mm thick	SQM	55.65
074 602-4600	Aluminum siding, Sandwich panels, with 25 mm insulation	SQM	139.00
<b>074 606</b>	<b>STEEL SIDING:</b>		
074 606-0050	Steel siding, Beveled, vinyl coated, 250 mm wide	SQM	33.50
074 606-0300	Steel siding, Galv. corrugated or ribbed, 22 gauge		33.70
074 606-1500	Steel siding, Factory sandwich panel, 26 ga., 25 mm insulation, galvanized, 2 sides		130.50
074 606-2000	Steel siding, Factory sandwich panel, 22 ga., galv. 50 mm insulation, baked enamel exterior	↓	202.25
<b>074 607</b>	<b>VINYL SIDING:</b>		
074 607-0020	Vinyl siding, Solid PVC panels, 250 mm wide	SQM	20.65
<b>074 609</b>	<b>WOOD SIDING, BOARDS:</b>		
074 609-3200	Wood siding, boards, cedar bevel, short lengths, 13 mm x 150 mm	SQM	61.70
074 609-3800	Wood siding, boards, rough sawn, 25 mm x 100 mm,		83.20
074 609-5250	Wood siding, boards, redwood, Tounge & Groove boards, 25 mm x 200 mm		73.15
074 609-5400	Wood siding, boards, white pine, 25 mm x 200 mm	↓	20.36
<b>074 611</b>	<b>WOOD PRODUCT SIDING:</b>		
074 611-0050	Wood lap siding, hardboard, 11 mm x 200 mm wood grain texture finish	SQM	22.00
074 611-0100	Wood panel siding, 11 mm thick, smooth, textured or grooved		23.53
074 611-0700	Wood particle board siding, overlaid, 10 mm thick		18.22
074 611-2800	Wood siding, Plywood, redwood, textured siding, 16 mm thick		52.22
074 611-3000	Wood siding, Plywood, polyvinyl chloride coated, 10 mm thick	↓	27.11
<b>075</b>	<b>MEMBRANE ROOFING</b>		
<b>075 100</b>	<b>BUILT-UP ROOFING</b>		
<b>075 101</b>	<b>ASPHALT:</b>		
075 101-0010	Asphalt Coated felt, 13 kg, 18.6 m2/roll	ROLL	1.53
075 101-0300	Asphalt Coated felt, roll roofing 30 kg.		4.00
075 352-0700	Modified Bitumen roofing, 4mm, 3.81 to 5.86 kg/m2, with asphalt emulsion coating	↓	9.00
075 352-0710	Modified Bitumen roofing, PVC 1.2 mm, loose laid	SQM	18.00
075 352-0720	Modified Bitumen roofing, membranes with polyester reinforcement, 3 mm thick		7.00
075 352-0730	Modified Bitumen roofing, membranes with polyester reinforcement, 4 mm thick		8.00
075 352-0740	Modified Bitumen roofing, membranes with polyester reinforcement, 4 mm thick, granule finish		8.00
075 352-0750	Modified Bitumen roofing, membranes double reinforced with polyester + glass fiber, 4 mm thick	↓	8.00
<b>076</b>	<b>FLASHING &amp; SHEET METAL</b>		
<b>076 100</b>	<b>SHEET METAL ROOFING</b>		
<b>076 101</b>	<b>COPPER ROOFING:</b>		
076 101-0010	Copper roofing, 454 gram	KG	27.00

## DIVISION 7 : THERMAL & MOISTURE PROTECTION

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
076 101-0300	Copper roofing, 567 gram	KG	27.00
<b>076 102</b>	<b>LEAD ROOFING:</b>		
076 102-0010	Lead roofing	KG	6.00
<b>076 103</b>	<b>MONEL ROOFING:</b>		
076 103-0010	Monel roofing, 0.46 mm thick	SQ.M	258.00
076 103-0100	Monel roofing, 0.53 mm thick	"	338.00
<b>076 104</b>	<b>STAINLESS STEEL ROOFING:</b>		
076 104-0100	Stainless steel roofing, type 304, 26 gauge	SQ.M	120.50
<b>076 105</b>	<b>ZINC:</b>		
076 105-0100	Zinc copper alloy roofing, 0.7 mm thick	SQ.M	196.50
076 105-0400	Zinc copper alloy roofing, 1 mm thick	"	261.05
<b>076 200</b>	<b>SHEET METAL FLASH &amp; TRIM</b>		
<b>076 201</b>	<b>DOWNSPOUTS:</b>		
076 201-0400	Downspouts aluminum 76 mm x 100 mm, enameled, 0.60 mm thick	LM	16.35
076 201-0700	Downspouts, round, corrugated aluminum, 100 mm diameter, 0.60 mm thick	"	11.30
076 201-0900	Aluminum wire strainer, round 100 mm	EA	5.16
076 201-1300	Aluminum wire strainer, rectangular 76 X 100 mm	"	9.18
076 201-1800	Downspouts, copper, round, 454 gram, 100 mm diameter	LM	49.90
076 201-2500	Downspouts, copper, rectangular, plain, 76 mm x 100 mm	"	32.40
076 201-2700	Copper wire strainer, rectangular 76 x 100 mm	EA	12.54
076 201-3300	Copper wire strainer, round 100 mm	EA	16.00
076 201-4900	Downspouts, steel, galvanized, round, corrugated, 100 mm diam., 28 ga.	LM	6.89
076 201-5700	Downspouts, steel, galvanized, rectangular, corrugated, 28 ga., 76 mm x 100 mm	LM	13.94
076 201-6600	Galvanized steel wire strainer, rectangular 76 x 100 mm	EA	8.88
076 201-7000	Galvanized steel wire strainer, round 100 mm	"	3.95
076 201-7500	Downspouts, steel pipe, black, extra heavy, 100 mm diameter	LM	120.00
076 201-7600	Downspouts, steel pipe, black, extra heavy, 150 mm diameter	"	250.00
076 201-8200	Downspouts, vinyl, rectangular, 50 mm x 76 mm	"	7.00
<b>076 202</b>	<b>DRIP EDGE:</b>		
076 202-0300	Drip edge, aluminum, 0.40 mm thick, 710 mm wide	LM	12.88
076 202-0400	Drip edge, steel, galvanized, 200 mm wide	"	3.22
<b>076 203</b>	<b>ELBOW:</b>		
076 203-0010	Elbow aluminum, for downspout 76 mm x 100 mm	EA	8.32
076 203-0600	Elbow copper, 454 gram, for downspout, round, 76 mm diameter	"	38.30
<b>076 204</b>	<b>FLASHING:</b>		
076 204-0010	Flashing aluminum, mill finish, 0.30 mm thick	SQM	10.18
076 204-0200	Flashing aluminum, mill finish, 1 mm thick	SQM	50.54
076 204-1600	Flashing copper, 454 gram, sheets	SQM	100.41
076 204-2500	Flashing copper, 907 gram, sheets		200.82



## DIVISION 7 :THERMAL & MOISTURE PROTECTION

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
076 204-6100	Flashing lead-coated copper,fabric-backed		40.17
076 204-8900	Flashing stainless steel sheets, 32 ga, 0.25 mm thick	↓	66.00
<b>076 205</b>	<b>GUTTERS:</b>		
076 205-0010	Gutters aluminum, 127 mm box, 0.7 mm thick	LM	8.18
076 205-0700	Gutters copper, half round, 454 gram, 150 mm wide		40.74
076 205-2400	Gutters steel,galv.,half round or box,stock 127 mm wide	↓	6.40
<b>076 206</b>	<b>GUTTER GUARD:</b>		
076 206-0010	Gutter guard 150 mm wide strip,aluminum mesh	LM	3.68
<b>076 210</b>	<b>REGLET:</b>		
076 210-0010	Reglet aluminum, 0.64 mm, in concrete parapet	LM	8.47
076 210-0100	Reglet copper, 283.5 gram, in concrete parapet		14.64
076 210-0400	Reglet galvanized steel, 24ga.,in concrete parapet	↓	6.40
<b>076 217</b>	<b>SOFFIT:</b>		
076 217-0010	Sofit aluminum, 0.5 mm thick	SQM	25.68
076 217-0100	Sofit baked enamel on steel, 16 or 18 gauge	SQM	114.75
<b>077</b>	<b>ROOF SPECIALTIES &amp; ACCESSORIES</b>		
<b>077 100</b>	<b>PREFAB ROOF SPECIALTIES</b>		
<b>077 103</b>	<b>EXPANSION JOINT:</b>		
077 103-0400	Expansion joint, butyle or neoprene center with foam insulation, metal flanges, aluminum, 0.80 mm thick for openings upto 65 mm	LM	67.42
077 103-0610	Expansion joint, butyle or neoprene center with foam insulation, metal flanges, aluminum, 0.80 mm thick for openings upto 125 mm		94.67
077 103-0620	Expansion joint, butyle or neoprene center with foam insulation, metal flanges, aluminum, 0.80 mm thick for openings upto 200 mm		149.18
077 103-0700	Expansion joint, butyle or neoprene center with foam insulation, metal flanges, copper, 454 grams for openings upto 65 mm		91.80
077 103-0910	Expansion joint, butyle or neoprene center with foam insulation, metal flanges, copper, 454 grams for openings upto 125 mm		123.36
077 103-1000	Expansion joint, butyle or neoprene center with foam insulation, metal flanges, galvanized steel, 26 ga. for openings upto 65 mm		55.08
077 103-1220	Expansion joint, butyle or neoprene center with foam insulation, metal flanges, galvanized steel, 26 ga. for openings upto 200 mm		139.14
077 103-1300	Expansion joint, butyle or neoprene center with foam insulation, metal flanges, lead-coated copper, 454 grams for openings upto 65 mm		120.49
077 103-1600	Expansion joint, butyle or neoprene center with foam insulation, metal flanges, stainless steel, 0.46 mm,for openings upto 65 mm		81.76
077 103-1820	Expansion joint, butyle or neoprene center with foam insulation, metal flanges, stainless steel, 0.46 mm,for openings upto 200 mm		176.43
077 103-1950	Expansion joint,polyethylene bellows,with galvanized steel flanges		31.13
077 103-2000	Roof expansion joint,with extruded aluminum cover, 50 mm		216.60
077 103-2100	Roof expansion joint,plastic curbs,foam center,standard		78.90
077 103-2500	Roof to wall expansion joint,with extruded aluminum cover		180.74
077 103-2800	Wall expansion joint,closed cell foam on PVC cover 300 mm wide	↓	31.70
<b>077 104</b>	<b>FASCIA:</b>		



## DIVISION 7 : THERMAL & MOISTURE PROTECTION

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
077 104-0300	Fascia aluminum ,reverse board & batten, 0.8 mm thick colored	SQ.M	61.68
077 104-0600	Fascia,steel galvanized and enameled,short panels	SQ.M	96.20
<b>077 105</b>	<b>GRAVEL STOP:</b>		
077 105-0300	Gravel stop aluminum, 150 mm face height,1 mm thick,mill finish	LM	22.38
077 105-0900	Gravel stop aluminum, 300 mm face height, 2 piece,mill finish		31.42
077 105-1360	Gravel stop,galv.steel, 24 ga.,100 mm leg,plain,with continuous cleat,150 mm high		21.23
077 105-1600	Gravel stop,polyvinyl chloride, 230 mm face height		36.00
077 105-1900	Gravel stop,stainless steel, 20 ga, 300 mm face height	↓	150.60
<b>077 200</b>	<b>ROOF ACCESSORIES:</b>		
<b>077 204</b>	<b>CEILING HATCHES:</b>		
077 204-0010	Ceiling hatches, 760 mm x 760 mm,single leaf,steel frame & cover	EA	1,076.00
077 204-0100	Ceiling hatches, 760 mm x 760 mm,single leaf,steel frame & aluminum cover		1,076.00
077 204-0300	Ceiling hatches, 760 mm x 915 mm,single leaf,steel frame & steel cover		1,090.13
077 204-0400	Ceiling hatches, 760 mm x 915 mm,single leaf,steel frame & aluminum cover	↓	1,191.00
<b>077 206</b>	<b>ROOF HATCHES:</b>		
077 206-0500	Roof hatches with 25 mm fiberglass insul., 760 mm x 915 mm,aluminum curb and cover	EA	932.50
077 206-0520	Roof hatches with 25 mm fiberglass insul., 760 mm x 915 mm,galvanized steel curb and aluminum cover		861.00
077 206-0600	Roof hatches with 25 mm fiberglass insul., 760 mm x 1370 mm, & with aluminum curb and cover		1,248.00
077 206-0800	Roof hatches with 25mm fiberglass insul., 760 mm x 1370 mm, & with galvanized steel curb and aluminum cover		1,219.00
077 206-0900	Roof hatches with 25 mm fiberglass insul., 760 mm x 1370 mm, & with galvanized steel curb and cover		1,176.00
077 206-1200	Roof hatches, 760 mm x 2440 mm,aluminum curb and cover		2,553.00
077 206-1400	Roof hatches, 760 mm x 2440 mm,galvanized steel curb and aluminum cover		2,481.00
077 206-1500	Roof hatches, 760 mm x 2440 mm,galvanized steel curb and cover	↓	2,309.00
<b>077 208</b>	<b>SMOKE VENT:</b>		
077 208-0100	Smoke ventet,insulated, 1220 mm x 1220 mm,aluminum cover&frame	EA	3,370.00
077 208-0200	Smoke ventet,insulated, 1220 mm x 1220 mm,galvanized cover&frame		3,063.00
077 208-0300	Smoke ventet,insulated, 1220 mm x 2400 mm,aluminum cover&frame		4,590.00
077 208-0400	Smoke ventet,insulated, 1220 mm x 2400 mm,galvanized cover&frame	↓	4,016.00
<b>077 210</b>	<b>ROOF VENTS:</b>		
077 210-0010	Roof vents,mushroom for built-up roofs,aluminum ,150 mm high	EA	79.00
077 210-0100	Roof vents, mushroom for built-up roofs, PVC, 150 mm high	"	79.00
<b>078</b>	<b>SKYLIGHTS</b>		
<b>078 100</b>	<b>PLASTIC SKYLIGHTS</b>		
<b>078 101</b>	<b>SKYLIGHT:</b>		
078 101-0300	Skylight plastic roof domes,curb mounted,with 100 mm insulated curb "L" frames,nominal size 1.00 m2,double, lexan sheet	SQM	1,250.00



## DIVISION 7 : THERMAL & MOISTURE PROTECTION

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
078 101-2930	Skylight plastic roof pyramid, acrylic double skin, 6 mm thick, nominal size 6 m2		3,300.00
078 101-2940	Skylight plastic roof pyramid, polycarbonat single skin, 6 mm thick, nominal size 6 m2		2,300.00
078 101-2950	Skylight plastic roof pyramid, polycarbonat double skin, 6 mm thick, nominal size 6 m2	↓	4,700.00
<b>078 200</b>	<b>METAL FRAMED SKYLIGHTS</b>		
<b>078 202</b>	<b>SKYROOFS</b>		
078 202-0010	Skyroofs, translucent panels, 70 mm thick	SQ.M HORIZONTAL	476.00
<b>078 400</b>	<b>GLASS BLOCK SKYLIGHTS</b>		
<b>078 402</b>	<b>PREFABRICATED:</b>		
078 402-0010	Prefabricated glass block with metal frame average	SQ.M	1,786.00
<b>079</b>	<b>JOINT SEALERS</b>		
<b>079 100</b>	<b>JOINT FILLERS &amp; GASKETS</b>		
<b>079 204</b>	<b>SEALANTS &amp; CAULKINGS</b>		
<b>079 204</b>	<b>CAULKING AND SEALANTS:</b>		
079 204-0020	Acoustical sealant, elastomeric, 200 ml / Tube	CARTRIDGE	8.00
079 204-0100	Caulking compound, oil base, bulk, brilliant white color	"	4.00
079 204-1400	Caulking & Sealant, butyl base, bulk	"	15.00
079 204-2000	Caulking & sealant, latex acrylic base, bulk	↓	3.75
079 204-2100	Caulking & sealant, latex acrylic base, cartridges	↓	3.75
079 204-2300	Caulking and sealant, polysulfide compound, 1 component, bulk	LITER	23.00
079 204-3200	Caulking and sealant, polyurethane, 1 or 2 components, bulk	↓	23.00
079 204-4100	Caulking and sealant, silicone	↓	25.00
079 204-4200	Caulking and sealant, silicone, rubber, cartridges 280 ML	CARTRIDGE	9.90
079 204-4400	Sealant, neoprene gaskets,	LM	1.70
079 204-5950	Sealant, PVC tape,	LM	0.45
079 204-6010	Bituminous adhesive for protection boards	KG	6.50
079 204-6020	Sealant cold applied	↓	5.00
079 204-6030	Sealant hot applied	↓	5.20

## DIVISION 7 : THERMAL & MOISTURE PROTECTION

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
078 101-0350	Skylight plastic roof domes, curb mounted, with 100 mm insulated curb "L" frames, nominal size 1.00 m2, single, lexan sheet, 6 mm	SQM	750.00
078 101-0400	Skylight plastic roof domes, curb mounted, with 100 mm insulated curb "L" frames, nominal size 2 m2, double, lexan sheet, 6.4 mm		3,900.00
078 101-0700	Skylight plastic roof domes, curb mounted, with 100 mm insulated curb "L" frames, nominal size 2 m2, single, lexan 6 mm		2,500.00
078 101-0900	Skylight plastic roof domes, curb mounted, with 100 mm insulated curb "L" frames, nominal size 3 m2, double, lexan and steel frame		18,000.00
078 101-1200	Skylight plastic roof domes, curb mounted, with 100 mm insulated curb "L" frames, nominal size 4 m2, double		28,800.00
078 101-2130	Skylight, ventilating insulated plexiglass dome with insulated curb mounting size 915 mm x 915 mm, lexan sheet, 4 mm	↓	620.00
078 101-2150	Skylight, ventilating insulated plexiglass dome with insulated curb mounting size 1320 mm x 1320 mm, lexan sheet 6 mm	EA	1,700.00
078 101-2160	Skylight, ventilating insulated plexiglass dome with insulated curb mounting size 710 mm x 1320 mm, lexan 6 mm	"	1,400.00
078 101-2710	Skylight plastic roof domes, acrylic single skin, 4 mm thick, nominal size 1 m2	SQM	400.00
078 101-2720	Skylight plastic roof domes, acrylic double skin, 4 mm thick, nominal size 1 m2	SQM	850.00
078 101-2730	Skylight plastic roof domes, polycarbonate single skin, 4 mm thick, nominal size 1 m2		500.00
078 101-2740	Skylight plastic roof domes, polycarbonate double skin, 4 mm thick, nominal size 1 m2		1,050.00
078 101-2750	Skylight plastic roof domes, acrylic single skin, 4 mm thick, nominal size 1.21 m2		500.00
078 101-2760	Skylight plastic roof domes, acrylic double skin, 4 mm thick, nominal size 1.21 m2		1,060.00
078 101-2780	Skylight plastic roof domes, polycarbonate single skin, 4 mm thick, nominal size 1.21 m2		600.00
078 101-2790	Skylight plastic roof domes, polycarbonate double skin, 4 mm thick, nominal size 1.21 m2		1,260.00
078 101-2800	Skylight plastic roof domes, acrylic single skin, 6 mm thick, nominal size 1.69 m2		680.00
078 101-2810	Skylight plastic roof domes, acrylic double skin, 6 mm thick, nominal size 1.69 m2		1,400.00
078 101-2820	Skylight plastic roof domes, polycarbonat single skin, 6 mm thick, nominal size 1.69 m2		850.00
078 101-2830	Skylight plastic roof domes, polycarbonat double skin, 6 mm thick, nominal size 1.69 m2		1,800.00
078 101-2840	Skylight plastic roof domes, acrylic single skin, 6 mm thick, nominal size 4 m2		1,050.00
078 101-2850	Skylight plastic roof domes, acrylic double skin, 6 mm thick, nominal size 4 m2		2,250.00
078 101-2860	Skylight plastic roof domes, polycarbonat single skin, 6 mm thick, nominal size 4 m2		1,450.00
078 101-2870	Skylight plastic roof domes, polycarbonat double skin, 6 mm thick, nominal size 4 m2		3,000.00
078 101-2880	Skylight plastic roof pyramid, acrylic single skin, 4 mm thick, nominal size 1.5 m2	↓	650.00
078 101-2890	Skylight plastic roof pyramid, acrylic double skin, 4 mm thick, nominal size 1.5 m2	SQM	1,350.00
078 101-2900	Skylight plastic roof pyramid, polycarbonat single skin, 4 mm thick, nominal size 1.5 m2		850.00
078 101-2910	Skylight plastic roof pyramid, polycarbonat double skin, 4 mm thick, nominal size 1.5 m2		1,750.00
078 101-2920	Skylight plastic roof pyramid, acrylic single skin, 6 mm thick, nominal size 6 m2		1,600.00



A decorative geometric pattern, likely a traditional Islamic or Arabesque design, is located in the top right corner of the page. It features a complex, repeating lattice of interlocking lines forming various polygons and star-like shapes. The pattern is rendered in a light gray color against a white background.

# Division 8

## Doors & Windows

## DIVISION 8: DOORS & WINDOWS

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
<b>081</b>	<b>METAL DOORS &amp; FRAMES</b>		
<b>081 100</b>	<b>STEEL DOORS &amp; FRAMES</b>		
<b>081 103</b>	<b>COMMERCIAL STEEL DOORS: "Hardware &amp; frame not included"</b>		
081 103-0020	Commercial Steel Door, Flush, full panel, Hollow core, 35 mm thick, 20 ga., 610 mm x 2035 mm, hardware & frame not included	EA	469.00
081 103-0100	Commercial Steel Door, Flush, full panel, Hollow core, 35 mm thick, 20 ga., 915 mm x 2135 mm, hardware & frame not included		509.00
081 103-0340	Commercial Steel Door, Flush, Hollow core, Half Glass, 20 ga., 815 mm x 2035 mm, hardware & frame not included		509.00
081 103-0400	Commercial Steel Door, Flush, Hollow core, Half Glass, 20 ga., 915 mm x 2135 mm, hardware & frame not included		509.00
081 103-1060	Commercial Steel Door, Flush, full panel, Hollow core, 44 mm thick, 20 ga., 915 mm x 2135 mm, hardware & frame not included		509.00
081 103-1100	Commercial Steel Door, Flush, full panel, Hollow core, 44 mm thick, 20 ga., 1220 mm x 2440 mm, hardware & frame not included		523.00
081 103-1120	Commercial Steel Door, Flush, full panel, Hollow core, 44 mm thick, 18 ga., 815 mm x 2035 mm, hardware & frame not included		509.00
081 103-1180	Commercial Steel Door, Flush, full panel, Hollow core, 44 mm thick, 18 ga., 1220 mm x 2135 mm, hardware & frame not included		509.00
081 103-1200	Commercial Steel Door, Flush, full panel, Hollow core, 44 mm thick, 18 ga., 1220 mm x 2440 mm, hardware & frame not included		523.00
081 103-1220	Commercial Steel Door, Flush, Half glass, panel, hollow core, 44 mm thick, 20 ga., 815 mm x 2035 mm, hardware & frame not included		559.00
081 103-1280	Commercial Steel Door, Flush, Half glass, panel, hollow core, 44 mm thick, 20 ga., 1220 mm x 2135 mm, hardware & frame not included		559.00
081 103-1360	Commercial Steel Door, Flush, Half glass, panel, hollow core, 44 mm thick, 18 ga., 915 mm x 2135 mm, hardware & frame not included		559.00
081 103-1400	Commercial Steel Door, Flush, Half glass, panel, hollow core, 44 mm thick, 18 ga., 1220 mm x 2440 mm, hardware & frame not included		573.00
081 103-1760	Commercial Steel Door, flush, insulated, 44mm thick, full panel, 18 ga, 915 mm x 2135 mm, hardware & frame not included		509.00
081 103-1800	Commercial Steel Door, flush, insulated, 44 mm thick, full panel, 18 ga, 1220 mm x 2440 mm, hardware & frame not included		523.00
081 103-1860	Commercial Steel Door, flush, insulated, 44 mm thick, half glass, 18 ga, 915 mm x 2135 mm, hardware & frame not included		559.00
081 103-1900	Commercial Steel Door, flush, insulated, 44 mm thick, half glass, 18 ga, 1220 mm x 2440 mm, hardware & frame not included	↓	559.00
<b>081 106</b>	<b>DOOR FRAMES:</b>		
081 106-0100	Door frames, 150 mm steel channels 12 kg/m, with anchors and bar stops, 915 mm x 2135 mm door, weighs 91 kg	EA	276.00
081 106-0200	Door frames, 200 mm steel channels 17 kg/m, with anchors and bar stops, 1830 mm x 2440 mm door, weighs 136 kg		320.00
081 106-0400	Door frames, 250 mm steel channels, 22 kg/m with anchors and bar stops, 3000 mm x 3000 mm door weighs 238 kg		472.00
081 106-0600	Door frames, 310 mm steel channels 31 kg/m with anchors and bar stops, 3660 mm x 3660 mm door weighs 374 kg	↓	520.00
<b>081 110</b>	<b>FIRE DOOR: "Hardware &amp; frame not included"</b>		
081 110-0040	Fire door steel, flush, 90 minute, full panel, 20 ga., 815 mm x 2035 mm, hardware & frame not included	EA	551.00
081 110-0080	Fire door steel, flush, 90 minute, full panel, 20 ga., 915 mm x 2135 mm, hardware & frame not included	EA	551.00
081 110-0140	Fire door steel, flush, 90 minute, full panel, 16 ga., 915 mm x 2035 mm, hardware & frame not included	EA	551.00



## DIVISION 8: DOORS & WINDOWS

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
081 110-0180	Fire door steel,flush, 90 minuite,full panel, 18 ga., 915 mm x 2135 mm,hardware & frame not included		551.00
081 110-0200	Fire door steel,flush, 90 minuite,full panel, 18 ga., 1220 mm x 2135 mm,hardware & frame not included		565.00
081 110-0580	Fire door steel,flush, 90 min.,composite, 20 ga., 915 mm x 2135 mm		551.00
081 110-0700	Fire door steel,flush, 3 hour, composite,18 ga., 1220 mm x 2135 mm	▼	565.00
<b>081 200</b>	<b>ALUMINUM DOORS &amp; FRAMES:</b>		
<b>081 204</b>	<b>ALUMINUM FRAMES:</b>		
081 200-0500	Aluminum frames entrance door, 1830 mm x 2135 mm opening,clear finish	OPENING	506.00
081 200-0520	Aluminum frame entrance door, 915 mm x 2135 mm opening,bronze finish		429.00
081 200-0540	Aluminum frame entrance door, 915 mm x 2135 mm opening,black finish		429.00
081 200-1110	Aluminum frames entrance,black finish,with 915 mm high transoms, 915 mm x 3050 mm opening		622.00
081 200-1550	Aluminum frames entrance,bronze finish,with 915 mm high transoms, 1830 x 3050 mm opening	▼	765.00
<b>081 212</b>	<b>ALUMINUM DOORS &amp; FRAMES:</b>		
081 212-0020	Aluminum doors & frames,entrance,narrow stile,including hardware and closer,no glass, 915 mm x 2135 mm opening,clear finish	EA	1,594.00
081 212-0040	Aluminum doors & frames,entrance,narrow stile,including hardware and closer,noglass, 915 mm x 2135 mm opening,dark bronze finish		1,594.00
081 212-0060	Aluminum doors & frames,entrance,narrow stile,including hardware and closer,no glass, 915 mm x 2135 mm opening,black finish		1,594.00
081 212-0200	Aluminum doors & frames,entrance,narrow stile,including hardware and closer,no glass, 1067 mm x 3050 mm opening, 915 mm high transom,clear finish		1,846.00
081 212-0400	Aluminum doors & frames,entrance,narrow stile,including hardware and closer,no glass,1830 mm x 3050 mm opening,915mm high transom,dark bronze finish		2,702.00
081 212-1000	Aluminum doors & frames,entrance,narrow stile,including hardware and concealed panic devicer with glass, double glazed 17 mm, 915 mm x 2135 mm opening,light bronze finish		3,198.00
081 212-1100	Aluminum doors & frames,entrance,narrow stile,including hardware and concealed panic device with glass, double glazed 17 mm,1067 mm x 3050 mm opening, 915 mm high transom,black finish		3,665.00
081 212-1200	Aluminum doors & frames,entrance,narrow stile,including hardware and closer,with glass, double glazed 25 mm, 1830 mm x 2135 mm opening,dark bronze finish		3,103.00
081 212-1400	Aluminum doors & frames,entrance,narrow stile,including hardware and closer,with glass, double glazed 25 mm,1830 mm x 3050 mm opening, 915 mm high transom,Painted.	▼	3,628.00
<b>082</b>	<b>WOOD &amp; PLASTIC DOORS</b>		
<b>082 050</b>	<b>WOOD &amp; PLASTIC DOORS</b>		
<b>082 054</b>	<b>WOOD FRAMES:</b>		
082 054-0440	Exterior frame,including exterior trim,pine, 42 mm upto 167 mm deep	LM	132.00
082 054-0600	Exterior frame,including exterior trim,oak, 42 mm upto 167 mm deep	LM	174.00
082 054-0800	Exterior frame,including exterior trim,oak, 42 mm upto 116 mm deep,walnut	LM	251.00
082 054-0900	Exterior frame,including exterior trim,cherry, 42 mm upto 167 mm deep		284.00
082 054-1000	Exterior wood sills, 50 mm x 200 mm deep oak		207.00
082 054-3000	Wood frame,interior pine, 42 mm upto 92 mm deep		89.00
082 054-3040	Wood frame,interior pine,42 mm upto 132 mm deep	▼	91.00
082 054-3240	Wood frame,interior, oak, 42 mm x 132 mm deep	LM	116.00



## DIVISION 8: DOORS & WINDOWS

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
082 054-3440	Wood frame,interior, walnut, 42 mm x 132 mm deep	LM	198.00
<b>082 062</b>	<b>WOOD DOOR,ARCHITECTURAL:</b>		
082 062-0020	Interior 'Wood door architectural, flush, 44 mm, 7 ply,hollow core,birch face,hardware and frame not included	EA	730.00
082 062-0220	Interior 'Wood door architectural, flush, 44mm, 7 ply,hollow core,oak face,hardware and frame not included		680.00
082 062-0320	Interior 'Wood door architectural, flush, 44 mm, 7 ply,hollow core,walnut face,hardware and frame not included		943.00
082 062-0380	Interior 'Wood door architectural, flush, 44mm, 7 ply,hollow core,african mahogany,hardware and frame not included		737.00
082 062-0400	Interior 'Wood door architectural, flush, 44mm, 7 ply,hollow core,cherry face,hardware and frame not included		859.00
082 062-0410	Interior 'Wood door architectural, flush, 44mm, 7 ply,hollow core,red wood,hardware and frame not included		732.00
082 062-0420	Interior 'Wood door architectural, flush, 44mm, 7 ply,hollow core,phillipine mahogany,hardware and frame not included		726.00
082 062-1720	Interior Wood door architectural, flush, 7 ply, 44 mm,hollow core,high pressure plastic laminate,hardware and frame not included		710.00
082 062-2220	Interior Wood door architectural, flush 5 ply particle core,oak face,hardware and frame not included		814.00
082 062-2320	Interior Wood door architectural, flush, 5 ply particle core,walnut face,hardware and frame not included		1,025.00
082 062-2400	Interior Wood door,architectural flush, 5 ply particle core,african mahogany face,hardware and frame not included	↓	820.00
<b>082 066</b>	<b>WOOD DOOR,DECORATOR:</b>		
082 066-3000	Solid wood door, 44 mm,african mahogany	SQM	1,361.36
082 066-3010	Solid wood door, 44 mm,cherry		1,843.63
082 066-3020	Solid wood door, 44 mm,phillipine mahogany		1,154.54
082 066-3030	Solid wood door, 44 mm,brazilian mahogany		1,154.54
082 066-3200	Solid wood door, 44 mm,red oak		1,265.00
082 066-4000	Solid wood door, 44 mm,hand curved mahogany	↓	700.00
<b>082 070</b>	<b>WOOD FIRE DOORS:</b>		
082 070-0140	Wood fire doors mineral core, 1 hour rated,oak face	EA	2,694.00
082 070-0280	Wood fire doors mineral core, 1 hour rated,cherry face	EA	2,821.00
<b>082 074</b>	<b>WOOD DOORS, PANELED:</b>		
082 074-0540	Wood doors,paneled interior,six panel,solid, 35 mm thick,pine,hardware & frame not included	SQM	1,034.54
082 074-0560	Wood doors,paneled interior,two panel,solid, 35 mm thick,pine,hardware & frame not included	SQM	1,044.54
082 074-0580	Wood doors,paneled interior,five panel,solid, 35 mm thick,pine,hardware & frame not included	SQM	932.27
<b>083</b>	<b>SPECIAL DOORS</b>		
<b>083 050</b>	<b>ACCESS DOORS</b>		
<b>083 054</b>	<b>ACCESS DOORS:</b>		
083 054-1100	Access doors,fire rated,with lock,metal, 300 mm x 300 mm	EA	1,250.00
083 054-1600	Access doors,fire rated, with lock,stainless steel, 610 mm x 915 mm		2,000.00
083 054-1700	Access doors,fire rated, with lock,stainless steel, 610 mm x 610 mm		1,700.00
083 054-3250	Recessed access door,for acoustic tile,metal, 610 mm x915 mm		2,000.00



## DIVISION 8: DOORS & WINDOWS

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
083 054-4100	Recessed access door,for drywall,metal, 300 mm x 300 mm	↓	1,250.00
<b>083 100</b>	<b>SLIDING DOORS:</b>		
<b>083 102</b>	<b>GLASS,SLIDING:</b>		
083 102-0030	Sliding vinyl clad door, 25 mm insulated glass, 1.8 m x 2.4 m	EA	4,725.00
<b>083 108</b>	<b>STEEL,SLIDING:</b>		
083 108-0500	Steel,manually operated sliding door up to 15 m wide x 5.4 m high,heavy duty,average	SQM	525.00
<b>083 180</b>	<b>SECURITY DOORS</b>		
<b>083 184</b>	<b>VAULT FRONT:</b>		
083 184-0200	Vault front door and frame, 815 mm x 1980 mm,clear opening, 2 hour test, weighs 430 kg, with time clock	EA	5,855.00
083 184-0350	Vault front door and frame, 1015 mm x 1980 mm,clear opening, 4 hour test, weighs 517 kg, with time clock		8,925.00
083 184-0360	Vault front door and frame, 1980mm x 915 mm clear dimension, satin stainless steel finish,dual control locks, weighs 1135 kg.		15,946.00
083 184-0370	Insulated vault door and frame,clear dimensions 1981 mm x 812 mm, painted gray finish, 3 wheel combination lock, weighs 375 kgs.		44,067.00
083 184-0380	Insulated vault door and frame,clear dimensions 1981 mm x 1016 mm, painted gray finish, 3 wheel combination lock, weighs 470 kgs.	↓	63,983.00
<b>083 250</b>	<b>COLD STORAGE DOORS</b>		
<b>083 251</b>	<b>COLD STORAGE:</b>		
083 251-0500	Cold storage door,galvanized steel,horizontal sliding>manual, 1525 mm x 2135 mm x 150 mm	EA	2,625.00
083 251-2000	Cold storage door,galvanized steel,horizontal sliding,power operated, 2745 mm x 3050 mm x 150 mm		5,282.00
083 251-3050	Cold storage door, stainless steel,hinged,lightweight, 915 mm x 2135 mm x 150 mm thick		1,365.00
083 251-3350	Cold storage door,galvanized steel,aluminum,hinged,lightweight, 915 mm x 2135 mm x 150 mm thick		1,534.00
083 251-5000	Cold storage door,galvanized steel,bi-parting>manual operated, 1830 mm x 2440 mm opening, 100 mm thick for cooler		2,835.00
083 251-5050	Cold storage door,galvanized steel,bi-parting>manual operated, 1830 mm x 2440 mm opening,100mm thick for freezer	↓	2,835.00
<b>083 300</b>	<b>COILING DOORS</b>		
<b>083 302</b>	<b>COUNTER DOORS:</b>		
083 302-0600	Counter doors,galvanized steel or aluminum, 1220 mm high roll-up, 1830 mm long	OPENING	8,505.00
<b>083 400</b>	<b>COILING GRILLES</b>		
<b>083 402</b>	<b>ROLL UP GRILLE:</b>		
083 402-0500	Roll up grille steel>manual operated, 4570 mm x 2440 mm high,including aluminium frame.	SQM	12,285.00
<b>083 600</b>	<b>SECTIONAL OVERHEAD DOORS</b>		
<b>083 604</b>	<b>OVERHEAD,COMMERCIAL:</b>		
083 604-1000	Commercial,overhead sectional door,wood, heavy duty,without frame, 45 mm thick, 2440 mm wide x 2440 mm high	EA	5,880.00
083 604-1300	Commercial,overhead sectional door,chain hoist,wood, heavy duty,without frame, 45 mm thick, 4265 mm wide x 4265 mm high		16,800.00



## DIVISION 8: DOORS & WINDOWS

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
083 604-1400	Commercial,overhead sectional door,chain hoist,wood, heavy duty,without frame, 45 mm thick, 2745 mm wide x 2135 mm high		16,800.00
083 604-1500	Commercial,overhead sectional door,chain hoist,wood, heavy duty,without frame, 45 mm thick, 6095 mm wide x 2440 mm high		3,690.75
083 604-2300	Commercial,overhead sectional door,fiberglass & aluminum,heavy duty,without frame, 45 mm x 3660 mm x 3660 mm		12,170.00
083 604-2600	Commercial,overhead sectional door,steel 24 ga, manual ,without frame 2440 mm x 2440 mm		4,900.00
083 604-2650	Commercial,overhead sectional door,steel 24 ga,manual ,without frame 3050 mm x 3050 mm		6,250.00
083 604-2900	Electric trolley operator, 250W, overhead sectional doors upto 3.6 m x 3.6 m		4,882.50
<b>083 606</b>	<b>RESIDENTIAL GARAGE DOORS:</b>		
083 606-0500	Residential garage doors including hardware,no frame,overhead, sectional,hardboard, 2745 mm x 2135 mm	EA	6,331.00
083 606-0800	Residential garage doors including hardware,no frame,overhead, sectional,metal, 4875 mm x 2135 mm		6,325.00
083 606-4000	Residential sectional garage door,including hardware,no frame,wood ,custom double 2475 mm x 2135 mm, with remote control		7,875.00
083 606-4100	Residential sectional garage door,including hardware,no frame,wood ,custom double 4875 mm x 2135 mm, with remote control		7,854.00
<b>083 700</b>	<b>HANGAR DOORS</b>		
<b>083 701</b>	<b>HANGAR DOOR:</b>		
083 701-0100	Hangar door bi-fold,overhead, 20 kg/m2 wind load,including electrical operation without sheeting, 3660 mm high x 12 m	SQM	276.00
<b>083 720</b>	<b>SPECIAL PURPOSE DOORS</b>		
<b>083 722</b>	<b>AIR CURTAINS:</b>		
083 722-1500	Air curtains,customer entrance door,unheated,including motor starter,transformer,door switch or temperature control for minimal wind stoppage, 3 m high,multiples of 0.9 m wide	LM	1,171.00
083 722-1600	Air curtains,customer entrance door,unheated,including motor starter,transformer,door switch or temperature control for minimal wind stoppage, 3 m high,multiples of 1.53 m wide		1,530.00
083 722-1700	Air curtains,customer entrance door,unheated,including motor starter,transformer,door switch or temperature control for minimal wind stoppage, 3 m high,multiples of 1.53 m wide		1,530.00
083 722-1800	Air curtains,customer entrance door,unheated,including motor starter,transformer,door switch or temperature control for minimal wind stoppage, 3 m high,multiples of 1.80 m wide		2,342.00
<b>083 732</b>	<b>ROLLING SERVICE DOORS:</b>		
083 732-0010	Rolling service doors steel,manual, 20 ga., 3050 mm x 3050 mm high,standard	EA	2,575.00
083 732-2000	Rolling service doors steel, 3 hours fire rated,manual, 20 ga., 2440 mm x 2440 mm high	EA	21,625.00
083 732-2500	Rolling service doors steel, 3 hours fire rated,manual, 20 ga., 4265 mm x 4265 mm high	EA	34,800.00
083 732-2510	Rolling service doors galvanized steel, motor operated, 1220 mm x 1830 mm		1,975.00
083 732-2520	Rolling service doors, galvanized steel frame, 2 mm thick tear-resistant woven polyester monofilament panel, 1.2 m x 1.2 m, motor operated		2,535.00
083 732-2530	Rolling service doors, stainless steel frame, 2 mm thick tear-resistant woven polyester monofilament panel, 2 m x 2 m, motor operated		9,901.00
083 732-2540	Rolling service doors, anodized aluminium frame, 2 mm thick tear-resistant woven polyester monofilament panel, 2 m x 2 m, motor operated		3,255.00



## DIVISION 8: DOORS & WINDOWS

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
083 732-2550	Rolling service doors, anodized aluminium frame, 2 mm thick tear-resistant woven polyester monofilament panel, 3 m x 3 m, motor operated		5,176.00
083 732-2560	Rolling service doors, anodized aluminium frame, 2 mm thick tear-resistant woven polyester monofilament panel, 3 m x 3 m, motor operated with balancing mechanism		12,567.00
083 732-2570	Rolling service doors, anodized aluminium frame, 2.5 mm thick tear-resistant woven polyester monofilament panel, 7 m x 5 m, motor operated with balancing mechanism		25,142.00
083 732-2580	Rolling service doors, anodized aluminium frame, PVC coated polyester fabric with a weight of 700 g/m <sup>2</sup> panel, 8 m x 5 m, motor operated		27,846.00
<b>083 750</b>	<b>SWING DOORS</b>		
<b>083 752</b>	<b>DOUBLE ACTING:</b>		
083 752-2050	Double acting swing door, 20 mm thick solid core wood, with metal frame & stainless steel base plate, 2.1 m high & 2.1 m wide	PAIR	17,000.00
<b>083 800</b>	<b>SOUND RETARDANT DOORS</b>		
<b>083 804</b>	<b>ACOUSTICAL:</b>		
083 804-0300	Acoustical steel door, 48 sound transmission coefficient rating including framed seals, 915 mm x 2135 mm high	EA	998.00
<b>084</b>	<b>ENTRANCE &amp; STOREFRONTS</b>		
<b>084 100</b>	<b>ALUMINUM</b>		
<b>084 103</b>	<b>BALANCED DOORS:</b>		
084 103-0010	Balanced doors, hardware & frame, aluminum & glass, 0.9 x 2 m, average	EA	2,640.00
<b>084 105</b>	<b>STOREFRONT SYSTEMS:</b>		
084 105-1000	Storefront systems, Aluminium frame, 10 mm plate glass, including 1800 mm x 2135 mm door with hardware, wall height to 3660 mm, commercial grade	SET	5,467.00
<b>084 300</b>	<b>STAINLESS STEEL</b>		
<b>084 301</b>	<b>STAINLESS STEEL AND GLASS:</b>		
084 301-0020	Stainless steel and glass entrance unit, narrow stiles 915 mm x 2135 mm opening including hardware average	EA	12,048.00
<b>084 600</b>	<b>AUTOMATIC DOORS</b>		
<b>084 602</b>	<b>SLIDING ENTRANCE:</b>		
084 602-0020	Aluminum framing Sliding entrance 3.7 m x 2.3 m, including 1.5 x 2.1 m door, 2 way mat activated, panic pushout, including operator & hardware, glazing	EA	17,700.00
<b>084 604</b>	<b>SLIDING PANEL:</b>		
084 604-0010	Sliding panel mall fronts, aluminum & glass, 4.5 m x 2.75 m height, photocell	SQM	19,500.00
<b>084 700</b>	<b>REVOLVING DOORS</b>		
<b>084 701</b>	<b>REVOLVING DOORS:</b>		
084 701-0010	Revolving doors aluminum, 2 m diameter, 2.1 m high, average	EA	80,000.00
084 701-1000	Revolving doors stainless steel, up to 2.1 m diameter, 2.1 m, high, average		70,000.00
084 701-1500	Revolving doors solid bronze up to 2.1 m diameter, 2.1 m high, with automatic controls, average		80,000.00
<b>085</b>	<b>METAL WINDOWS</b>		
<b>085 100</b>	<b>STEEL WINDOWS</b>		



## DIVISION 8: DOORS & WINDOWS

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
<b>085 102</b>	<b>STEEL SASH:</b>		
085 102-1500	Steel sash, industrial, fixed, including 6 mm glazing & trim, horizontally pivoted	SQM	788.00
085 102-2500	Steel picture window including 6 mm glazing & trim	SQM	483.00
<b>085 104</b>	<b>STEEL WINDOWS:</b>		
085 104-1500	Commercial projected steel window including frame, trim & insulated glazing	SQM	1,312.00
<b>085 200</b>	<b>ALUMINUM WINDOWS</b>		
<b>085 202</b>	<b>ALUMINUM SASH:</b>		
085 202-0150	Fixed aluminum window sash, including 6 mm glazing & trim (1000 mm x 1200 mm)	EA	670.00
<b>085 204</b>	<b>ALUMINUM WINDOWS:</b>		
085 204-1000	Aluminum windows including frame and 17 mm glazing, casement type, including screen (600 x 1200 mm)	EA	670.00
085 204-1600	Aluminum windows including frame and 17 mm glazing, projected with screen, stain finish; (600 x 600 mm)		527.00
085 204-1700	Aluminum windows including frame and 10 mm glazing, projected with screen, bronze finish (600 x 600 mm)		544.00
085 204-1800	Aluminum windows including frame and 21 mm glazing, projected with screen, powder coated (600 x 600 mm)		527.00
085 204-3890	Aluminum windows including frame and glazing, awning type, powder coated, with 25 mm insulating glass & screen (600 x 600 mm)		527.00
085 204-3910	Aluminum windows including frame and glazing, awning type, bronze finish, with standard 6 mm glass & screen (600 x 600 mm)		479.00
085 204-3930	Aluminum windows including frame and glazing, awning type, enameled, with standard 6 mm glass & screen (600 x 600 mm)		539.00
085 204-4000	Aluminum windows including frame and glazing, sliding, 17 mm insulating glass; (1500 x 1000 mm)		1,173.00
085 204-4300	Aluminum windows including frame and glazing, sliding, standard 6 mm glass;		1,187.00
085 204-5000	Aluminum windows including frame and glazing, sliding aluminum, powder coated, 17 mm insulating glass;		1,278.00
<b>085 700</b>	<b>SCREENS</b>		
<b>085 701</b>	<b>SCREENS:</b>		
085 701-0800	Screens, security screen, aluminum frame with stainless steel cloth	SQM	212.00
<b>086</b>	<b>WOOD &amp; PLASTIC WINDOWS</b>		
<b>086 100</b>	<b>WOOD WINDOWS</b>		
<b>086 104</b>	<b>AWNING WINDOW:</b>		
086 104-1000	Awning window wood, vinyl clad, 21 mm insulating glass, including frame, screen & trim, less than 1 m <sup>2</sup> window	SQM	1,785.00
086 104-2000	Awning window wood, metal clad, 21 mm insulating glass, including frame, screen & trim, more than 1 m <sup>2</sup> window	SQM	998.00
<b>086 120</b>	<b>CASEMENT WINDOW:</b>		
086 120-0200	Casement window including frame, screen, and exterior trim, wood 610 mm x 1370 mm, standard 6 mm glazing & hardware mechanism.	EA	1,050.00
086 120-1120	Casement window, vinyl clad including frame, screen, exterior trim, 17 mm insulating glass, 900 mm x 1.8 m high & hardware mechanism	EA	1,758.00
<b>086 124</b>	<b>DOUBLE HUNG:</b>		
086 124-0200	Double hung, wood vinyl clad, including frame, screen, exterior trim, 17 mm insulating glass	SQM	1,758.00



## DIVISION 8: DOORS & WINDOWS

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
<b>086 132</b>	<b>PICTURE WINDOW:</b>		
086 132-0100	Picture window including frame and exterior trim, wood, 6 mm glazing	SQM	604.00
<b>086 140</b>	<b>SLIDING WINDOW:</b>		
086 140-0100	Sliding window including frame, screen, and exterior trim, wood, standard 6 mm glazing	EA	604.00
<b>086 152</b>	<b>WOOD SCREENS:</b>		
086 152-0100	Wood screen, 30 mm frames over 0.25 M2	SQ.M	87.00
<b>087</b>	<b>HARDWARE</b>		
<b>087 100</b>	<b>FINISH HARDWARE</b>		
<b>087 103</b>	<b>BOLTS, FLUSH:</b>		
087 103-0010	Bolts, flush, standard, concealed	EA	310.00
087 103-0800	Bolts, flush, automatic fire exit		2,709.00
087 103-1600	Bolts, flush, for electric release, add	▼	1,768.00
<b>087 105</b>	<b>BUMPER PLATES:</b>		
087 105-0100	Bumper plates, 40 mm x 20 mm, U channel	EA	29.00
087 105-1100	Bumper plates, tear drop, spring-steel, 200 mm high	EA	236.00
<b>087 108</b>	<b>DEADLOCKS:</b>		
087 108-0010	Deadlocks, mortise, outside key	EA	209.00
087 108-1000	Deadlocks, mortise, tubular, standard duty, outside key	EA	150.00
<b>087 110</b>	<b>DOORSTOPS:</b>		
087 110-0010	Door stop, holder & bumper, floor or wall	EA	36.00
087 110-1300	Door stop, wall bumper		10.00
087 110-1600	Door stop, floor bumper		18.00
087 110-1900	Door stop, plunger type door mounted	▼	10.00
<b>087 112</b>	<b>ENTRANCE LOCKS:</b>		
087 112-0020	Entrance locks, cylinder, grip handle, deadbolt	EA	372.00
<b>087 114</b>	<b>FLOOR CHECKS:</b>		
087 114-0010	Floor checks, for over 915 mm wide doors, single acting	EA	1,633.00
087 114-0500	Floor checks, for over 915 mm wide doors, double acting	EA	1,226.00
<b>087 116</b>	<b>HINGES:</b>		
087 116-0100	Hinges, full mortise, average frequency, steel base, non removable pin, 127 mm x 127 mm	PAIR	269.00
087 116-0200	Hinges, full mortise, average frequency, steel base, non removable pin, 150 mm x 150 mm		50.00
087 116-0600	Hinges, full mortise, average frequency, bronze base, non removable pin, 150 mm x 150 mm		110.00
087 116-0800	Hinges, full mortise, average frequency, stainless steel base, non removable pin, 150 mm x 150 mm		185.00
087 116-0920	Hinges, full mortise, average frequency, steel base, floating pin, 150 mm x 150 mm		100.00
087 116-0930	Hinges, full mortise, average frequency, bronze base, floating pin, 150 mm x 150 mm		93.00
087 116-0950	Hinges, full mortise, average frequency, stainless steel base, floating pin, 150 mm x 150 mm		165.00

## DIVISION 8: DOORS & WINDOWS

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
087 116-0980	Hinges,full mortise,average frequency,brass base plate, 150 mm x 150 mm,hospital grade,tip on pin type		583.00
087 116-1100	Hinges,full mortise,high frequency,steel base,non removable pin, 127 mm x 127 mm		370.00
<b>087 118</b>	<b>KICK PLATE:</b>		
087 118-0010	Kick plate,150 mm high, for 915 mm door, stainless steel or bronze	EA	1,009.00
<b>087 120</b>	<b>LOCKSET:</b>		
087 120-0020	Lockset ,standard duty,cylindrical with sectional trim,non-keyed	EA	568.00
087 120-0100	Lockset ,heavy duty,cylindrical with sectional trim,non-keyed		430.00
087 120-0420	Lockset standard duty,cylindrical,with sectional trim,keyed,single cylinder function hotel style		240.00
087 120-1420	Lockset heavy duty,cylindrical,with sectional trim,keyed,single cylinder function hotel style		140.00
087 120-1700	Lockset standard duty,cylindrical for residential,interior door, average		734.00
087 120-1800	Lockset standard duty,cylindrical for residential,exterior door, average		235.00
<b>087 125</b>	<b>MORTISE LOCKSET:</b>		
087 125-0100	Mortise lockset,wrought knobs & full escutcheon trim,keyed,office/ apartment entrancet,average	EA	846.00
087 125-0200	Mortise lockset,wrought knobs & full escutcheon trim,hotel,average		848.00
087 125-1000	Mortise Lockset,wrought knobs and sectional trim,non-keyed,entrance,office/apartment average		5.00
087 125-2210	Mortise Lockset,cast knobs and full escutcheon trim,non-keyed,single cylinder,hotel average	EA	10.00
<b>087 127</b>	<b>PANIC DEVICE:</b>		
087 127-0200	Panic device,for rim locks,bar and vertical rod,exit only	EA	1,822.00
087 127-1000	Panic device,for mortise locks,bar,exit only	EA	2,025.00
<b>087 129</b>	<b>PUSH - PULL:</b>		
087 129-0010	Push-plate,pull plate,aluminum	EA	26.00
087 129-0500	Push-plate,pull plate,bronze		68.00
087 129-6000	Door pull,cast bronze,average		66.00
<b>087 132</b>	<b>SPECIAL HINGES:</b>		
087 132-1000	Electric hinges with concealed conductor,average frequency,steel base, 114 mm x 114 mm	PAIR	45.00
087 132-1100	Electric hinges with concealed conductor,average frequency,bronze base, 114 mm x 114 mm		38.00
087 132-1210	Electric hinges with concealed conductor,high frequency,steel base, 114 mm x 114 mm	PAIR	530.00
087 132-4600	Spring hinge,single acting, 150 mm flange,steel		165.00
087 132-4700	Spring hinge,single acting, 150 mm flange,brass		1,226.00
<b>087 200</b>	<b>OPERATORS</b>		
<b>087 202</b>	<b>AUTOMATIC OPENERS:</b>		
087 202-1000	Automatic openers,sliding doors, 915 mm wide,including track & hanger,single	EA	10,041.00
<b>087 204</b>	<b>AUTOMATIC OPERATORS:</b>		
087 204-0200	Automatic Operators,industrial,sliding doors, 3.6 m wide	OPENING	15,437.00



## DIVISION 8: DOORS & WINDOWS

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
<b>087 206</b>	<b>DOOR CLOSER:</b>		
087 206-0020	Door closer,rack and pinion,adjustable backcheck,all sizes, hold open arm	EA	360.00
087 206-0100	Door closer,rack and pinion,adjustable backcheck,all sizes,fusible link	EA	510.00
<b>087 300</b>	<b>WEATHERSTRIPPING/SEALS</b>		
<b>087 302</b>	<b>ASTRAGALS:</b>		
087 302-0600	Astragals,one piece overlapping,cadmium plated steel or aluminum,flat, 3 mm x 75 mm	LM	22.00
087 302-1300	Astragals,one piece overlapping,Aluminum,vinyl bulb insert, 3 mm x 50 mm		21.00
087 302-2800	Astragals,one piece overlapping,Neoprene sponge strip,"Z" shaped,aluminum		24.00
087 302-4000	Astragals,one piece stile protection,extruded aluminum retainer,flush mount, pile insert	↓	18.00
<b>087 304</b>	<b>THRESHOLD:</b>		
087 304-0010	Threshold 915 mm long door saddles,aluminum	EA	37.00
087 304-0500	Threshold 915 mm long door saddles,bronze	↓	62.00
087 304-0700	Threshold 915 mm long door saddles,rubber	↓	70.00
<b>087 306</b>	<b>WEATHERSTRIPPING:</b>		
087 306-1000	Weatherstripping,doors,wood frame,interlocking,zinc	LM	10.00
087 306-1100	Weatherstripping,doors,wood frame,interlocking,bronze	LM	10.00
<b>087 500</b>	<b>DOOR/WINDOW ACCES.</b>		
<b>087 501</b>	<b>WINDOW GRATING:</b>		
087 501-0100	Steel window security grating anchored to walls, @7 kg/m2.welded & painted, average	SQM	236.25
<b>088</b>	<b>GLAZING</b>		
<b>088 100</b>	<b>GLASS</b>		
<b>088 108</b>	<b>BEVELED GLASS:</b>		
088 108-0010	Beveled glass design patterns,6mm thick, 13 mm bevel,average (straight)	SQM	13.00
<b>088 118</b>	<b>CLEAR FLOAT GLASS:</b>		
088 118-0700	Single clear float glass, 6 mm thick, annealed	SQM	75.00
088 118-0710	Single clear float glass, 6 mm thick, tempered		82.00
088 118-0720	Single clear float glass, 8 mm thick, annealed		96.00
088 118-0730	Single clear float glass, 8 mm thick, tempered	↓	105.00
088 118-0740	Single clear float glass,10 mm thick, annealed	SQM	124.00
088 118-0750	Single clear float glass,10 mm thick, tempered		152.00
088 118-0760	Single clear float glass,12 mm thick, annealed		150.00
088 118-0770	Single clear float glass,12 mm thick, tempered	↓	179.00
<b>088 120</b>	<b>TINTED CLEAR FLOAT GLASS:</b>		
088 120-0010	Single tinted float glass, 6 mm thick, bronze/grey,annealed	SQM	102.00
088 120-0020	Single tinted float glass, 6 mm thick, bronze/grey, tempered		110.00
088 120-0030	Single tinted float glass, 6 mm thick, blue, annealed		116.00
088 120-0040	Single tinted float glass, 6 mm thick, blue, tempered		124.00
088 120-0050	Single tinted float glass, 6 mm thick, evergreen, annealed		130.00
088 120-0060	Single tinted float glass, 6 mm thick, evergreen, tempered		138.00



## DIVISION 8: DOORS & WINDOWS

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
088 120-0070	Single tinted float glass, 10 mm thick, bronzew/grey, annealed		167.00
088 120-0080	Single tinted float glass, 10 mm thick, bronzew/grey, tempered		225.00
088 120-0090	Single tinted float glass, 12 mm thick, bronzew/grey, annealed		206.00
088 120-0100	Single tinted float glass, 12 mm thick, bronzew/grey, tempered	▼	299.00
<b>088 132</b>	<b>INSULATING GLASS:</b>		
088 132-0020	Insulating glass, 12 mm thick clear,tempered	SQM	152.00
088 132-0100	Insulating glass, 12 mm thick, tinted, clear (annealed)		189.00
088 132-0400	Insulating glass, 6/10/6 mm thick,double glazed,on blue ,tempered & clear annealed		217.00
088 132-0410	Insulating glass, 6/10/6 mm thick,double glazed,on gray ,tempered & clear annealed		203.00
088 132-0420	Insulating glass, 24 mm thick,double glazed,6mm float,clear (6/12/6)		167.00
088 132-0500	Insulating glass, 24 mm thick,double glazed,6mm float, tinted, tempered (6/12/6)		188.00
088 132-0600	Insulating glass, 25 mm thick double glazed,6mm float, 6 mm wire (6/12/6.8)		375.00
088 132-2500	Insulating glass,heat reflective,film inside, 25 mm thick,unit,clear annealed		360.00
088 132-2600	Insulating glass,heat reflective,film inside, 25 mm thick,unit,clear tempered	▼	380.00
<b>088 136</b>	<b>LAMINATED GLASS:</b>		
088 136-0010	Laminted glass,clear float, 0.76 mm vinyl,6mm thick (6 + .76)	SQM	151.00
088 136-0100	Laminted glass,clear float, 0.76 mm vinyl,10mm thick (10+.76)		193.00
088 136-2000	Laminted glass,bullet-resisting, 30 mm thick (Resin cast int.)		760.00
088 136-2500	Laminted glass,bullet-resisting, 55 mm thick (Resin cast int.)	▼	1,430.00
<b>088 144</b>	<b>MIRRORS:</b>		
088 144-0100	Mirrors,no frames,wall type, 6 mm plate glass,polished edge	SQM	95.00
088 144-2000	Mirrors,float glass 6 mm thick one way transparent	▼	262.00
<b>088 148</b>	<b>OBSCURE GLASS:</b>		
088 148-0100	Obscure glass, 6 mm thick,average, clear, annealed	SQM	80.00
088 148-0200	Obscure glass, 6 mm thick,average, clear, tempered		85.00
088 148-0300	Obscure glass, 6 mm thick,average, bronze, annealed		89.00
088 148-0400	Obscure glass, 6 mm thick,average, bronze, tempered		105.00
088 148-1000	Obscure glass,16 mm thick, louvered, average	▼	92.00
<b>088 160</b>	<b>OBSCURE GLASS:</b>		
088 152-0300	Pyrolytic reflective glass, 6 mm thick, clear reflective, annealed	SQM	63.00
088 152-0350	Pyrolytic reflective glass, 6 mm thick, clear reflective, tempered	SQM	143.85
088 152-0400	Pyrolytic reflective glass, 6 mm thick, bronze reflective, annealed		0
088 152-0450	Pyrolytic reflective glass, 6 mm thick, bronze reflective, tempered		0
088 152-0500	Reflective glass 6mm float with fused metallic oxide, tinted	▼	168.00
<b>088 160</b>	<b>PYROLYTIC REFLECTIVE GLASS (SEMI REFLECTIVE)</b>		
088 160-0010	Wired glass, 6mm thick georgian pol. clear, annealed	SQM	265.00
088 160-2000	Wired glass, 6mm thick bronze, annealed	SQM	63.00
<b>088 162</b>	<b>WIRED GLASS:</b>		
<b>088 164</b>	<b>SANDBLASTED GLASS:</b>		
088 164-0500	Sandblasted plate glass, 6 mm thick, clear annealed - full sandblast	SQM	175.00
088 164-0600	Sandblasted plate glass, 10 mm thick,clear annealed-full sandblast	SQM	224.00



## DIVISION 8: DOORS & WINDOWS

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
<b>088 168</b>	<b>SHEET GLASS:</b>		
088 168-0200	Sheet Glass gray, 6 mm thick, annealed	SQM	73.00
<b>088 172</b>	<b>SPANDREL GLASS:</b>		
088 172-0010	Spandrel glass, clear tempered, enamelled, 6 mm thick	SQM	142.00
088 172-0300	Spandrel glass, bronze/grey tempered, enamelled, 6 mm thick		170.00
088 172-0350	Spandrel glass, clear tempered, enamelled, 10 mm thick		212.00
088 172-0400	Spandrel glass, bronze/grey tempered, enamelled, 10 mm thick	↓	275.00
<b>088 400</b>	<b>PLASTIC GLAZING</b>		
<b>088 404</b>	<b>PLEXIGLASS ACRYLIC:</b>		
088 404-0500	Plexiglass Acrylic, clear, masked, 6 mm thick, cut sheets	SQM	147.00
088 404-0900	Plexiglass Acrylic, clear, masked, 10 mm thick, cut sheets		292.00
088 404-1700	Plexiglass Acrylic, clear, masked, 20 mm thick, cut sheets	↓	525.00
<b>088 408</b>	<b>POLYCARBONATE:</b>		
088 408-1500	Polycarbonate clear, masked, cut sheets, 10 mm thick	SQM	337.00
<b>089</b>	<b>GLAZED CURTAIN WALL</b>		
<b>089 200</b>	<b>GLAZED CURTAIN WALL</b>		
<b>089 202</b>	<b>CURTAIN WALLS:</b>		
089 202-0050	Curtain walls, Aluminum, single glazed, average	SQM	450.00
089 202-0150	Curtain walls, Aluminum, double glazed, average		650.00
089 202-0200	Curtain walls, Aluminum, single glazed, curved, average	↓	961.00
<b>089 204</b>	<b>TUBE FRAMING:</b>		
089 204-0050	Tube framing, for window walls and store fronts, aluminum plain tube frame, mill finish, 45 mm x 45 mm	LM	634.00
089 204-0150	Tube framing, for window walls and store fronts, aluminum plain tube frame, mill finish, 45 mm x 100 mm		717.00
089 204-0250	Tube framing, for window walls and store fronts, aluminum plain tube frame, mill finish, 50 mm x 150 mm		935.00
089 204-2000	Tube framing, flush tube frame, mill finish, for glass, 50 mm x 115 mm	↓	773.00
<b>089 206</b>	<b>WINDOW WALLS:</b>		
089 206-0050	Window walls, aluminum, including glazing average	SQM	1,062.00
089 206-0100	Acoustical window wall, aluminum, double glazed 25 mm thick, 50 mm x 150 mm framing for airports	SQM	1,125.00



## الهدف:

التحكم بالوقت  
التحكم بالجودة  
التحكم بالتكلفة

إدارة المشاريع  
مؤشرات قبل التنفيذ  
مؤشرات التنفيذ  
مؤشرات الانتهاء

من أجل التصميم  
التصميم التفصيلي  
التكاليف  
إدارة التكاليف



A decorative geometric pattern, resembling a complex lattice or star design, is located in the top right corner of the page. It is rendered in a light gray color against a white background.

# Division 9

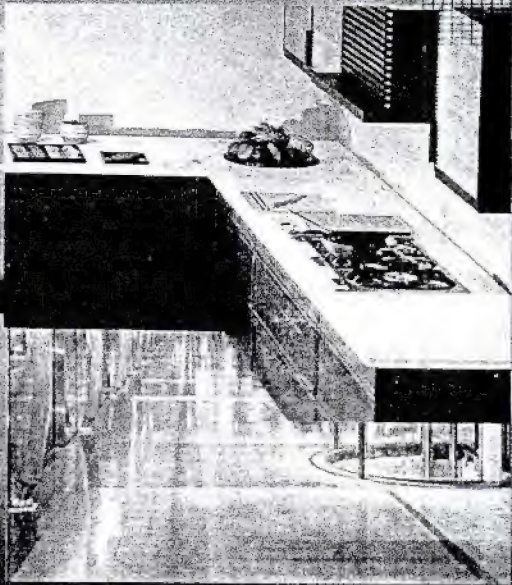
## Finishing



# MURO Stone Tech. Ltd.

SURFACES FOR  
THE NEW MILLENNIUM

## UARISTONE



الجيل الجديد  
من الأسطح لتزيين  
المطابخ والكاونترات

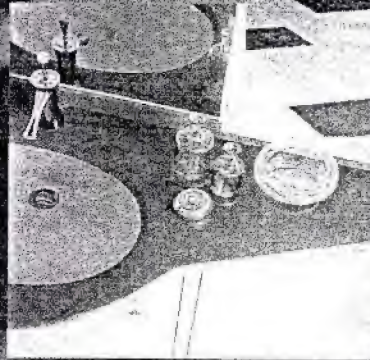


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- الأرضيات

## ASS STONE

**SURFACES FOR THE NEW MILLENNIUM**

شركة مورو لتقنية الصخور المحدودة

إحدى شركات الربيع والنصار وشركاهم

MURO Stone Tech. Ltd. Co.

e-mail: [sale@murostone.com](mailto:sale@murostone.com)

[www.murostone.com](http://www.murostone.com)

+ 966 1 4911028

+ 966 1 4912037

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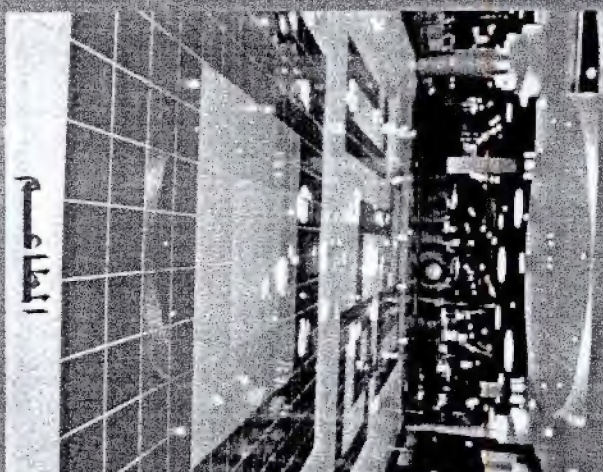
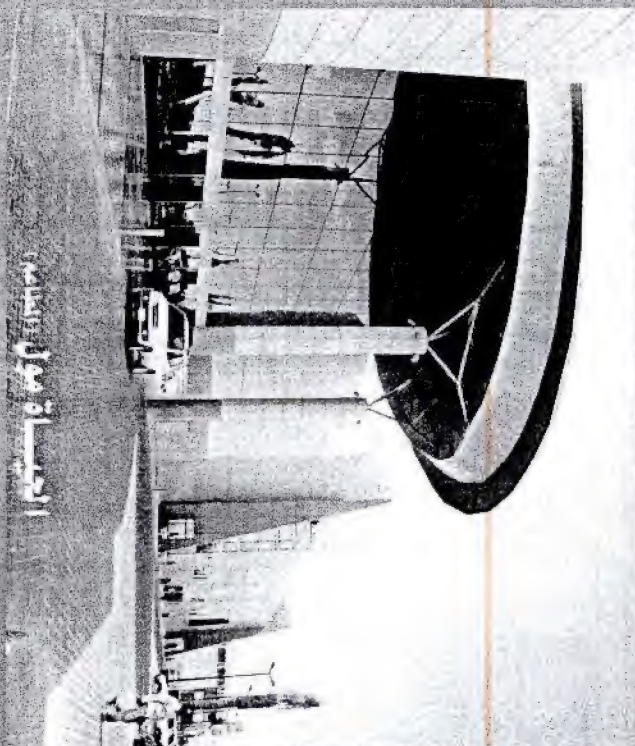
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# مؤسسة البرونز العالمية

ماض عريق وحاضر مشرق ومستقبل واحد



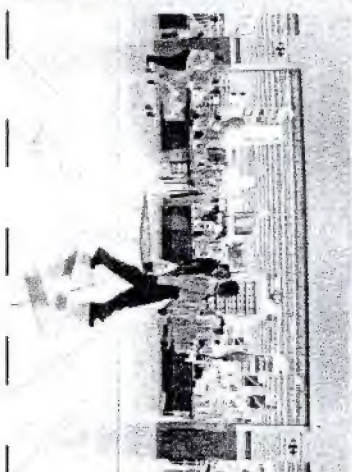
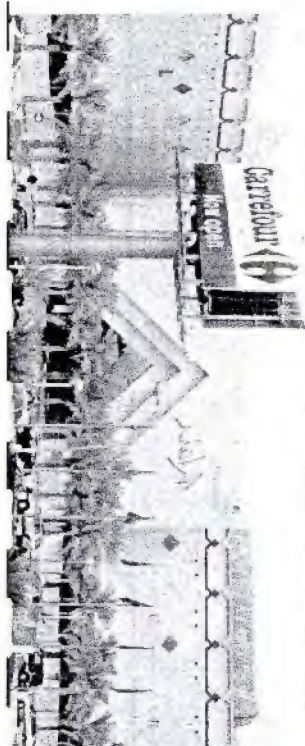
الجديدة مول الإمارات

المطعم

BRONZE INTERNATIONAL ESTABLISHMENT

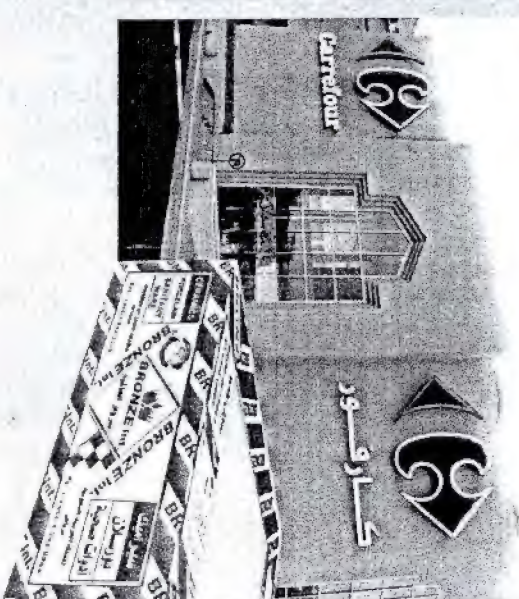
بعض مشاريعنا في المنطقة الشرقية

البراقع مول / كارفور / فروع بنك البلاد / مستشفى المصالح للولادة ٤٠٠٠ سيرتير



تصاميم مبهرة  
ومتنوعة من  
البورسلين  
والسيراميك

الجرودة  
الذوق  
السمو  
أحدث الموديلات



السعودية، الامارات، لبنان، غرب أفريقيا، اليمن  
من ب ١٦٩٩٩ الرياض ١١٥٦٦ الممعة العربية السعودية  
هاتف ٢٢٧٠ ٢٢٢ ٩١٦ + فاكس ٢٢٢ ٩١٦ +  
فرع جدة - هاتف : ٢٦٢٣ ٩١٦ / ٢٦٢٣ ٩١٦ +  
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Tel.: + 966 1 242 2270 Fax: + 966 1 242 0964  
Jeddah Branch Tel.: + 966 2 62368  
+ 966 2 623 9642 Fax: + 966 2 2806 164  
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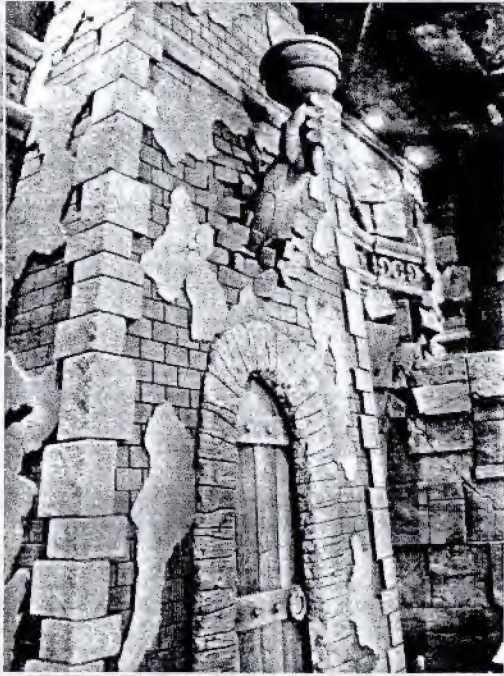
# المقاييس المتطورة





# سحر الطبيعة في مملكتك

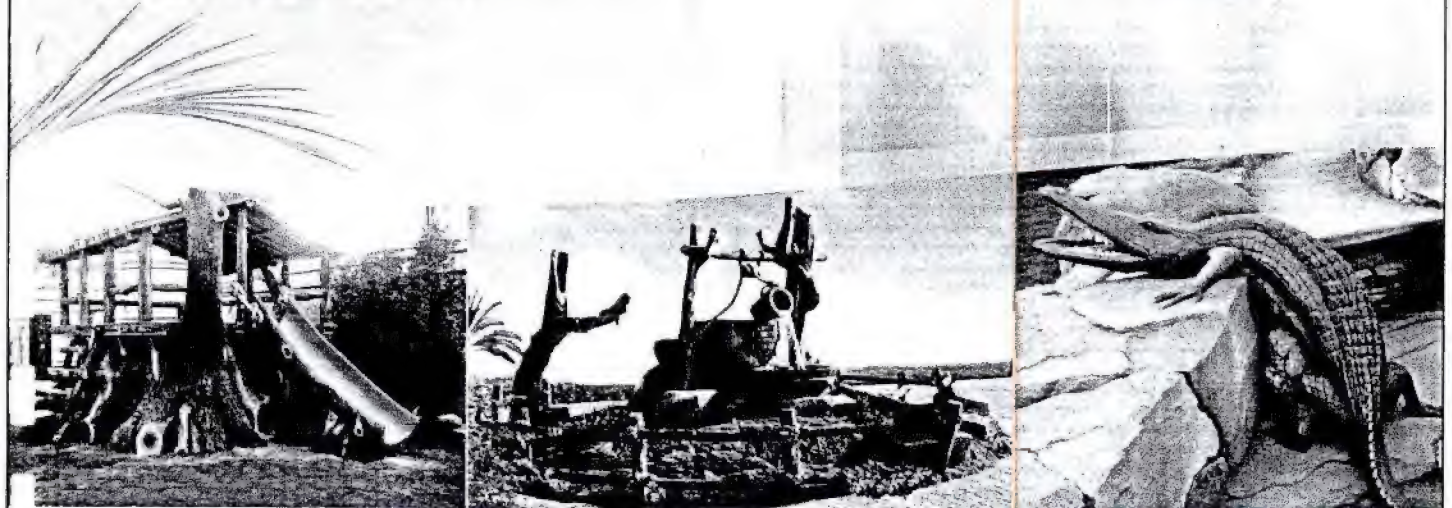
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## DIVISION 09: FINISHES

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
<b>091</b>	<b>METAL SUPPORT SYSTEM</b>		
<b>091 300</b>	<b>SUSPENSION SYSTEMS</b>		
<b>091 304</b>	<b>SUSPENSION SYSTEMS:</b>		
091 304-0050	Suspension systems for boards and tile, T bar, 610 mm x 1220 mm grid	LM	15.43
091 304-0300	Suspension systems for boards and tile, suspension system, T bar, 610 mm x 610 mm grid	SQM	13.11
091 304-0400	Suspension systems for boards and tile, concealed Z bar, 300 mm module	"	10.20
091 304-0600	Suspension systems for boards and tile, 38 mm carrier channels, 0.9 mm	LM	1.95
091 304-1040	Hanging wire, 12 ga.	KG	0.53
<b>092</b>	<b>LATH, PLASTER &amp; GYPSUM BOARD</b>		
<b>092 050</b>	<b>FURRING &amp; LATHING</b>		
<b>092 052</b>	<b>ACCESSORIES, PLASTER:</b>		
092 052-0010	Accessories plaster, casing bead, expanded flange, galvanized	LM	1.26
092 052-0100	Accessories plaster, casing bead, expanded flange, zinc alloy		1.75
092 052-0620	Accessories plaster, corner bead, expanded bullnose, 20 mm radius, galvanized		2.70
092 052-1640	Accessories plaster, corner bead, expanded bullnose, 20 mm radius, zinc alloy		1.80
092 052-1700	Accessories plaster, inside corner bead, 20 mm, 76 mm x 76 mm, painted	↓	1.33
<b>092 054</b>	<b>FURRING:</b>		
092 054-0600	Furring 35 mm channels, galvanized	LM	2.33
092 054-0700	Furring 50 mm channels, galvanized	"	2.65
<b>092 056</b>	<b>GYPSUM LATH:</b>		
092 056-0010	Gypsum lath, plain or perforated, 10 mm thick x 3000 mm	SQ.M	7.85
092 056-0100	Gypsum lath, plain or perforated, 13 mm thick	"	8.75
<b>092 058</b>	<b>METAL LATH:</b>		
092 058-0010	Metal lath, diamond, expanded 1.36 kg/m <sup>2</sup> , painted	SQM	9.00
092 058-0100	Metal lath, diamond, expanded 1.36 kg/m <sup>2</sup> , galvanized		5.10
092 058-0400	Metal lath, diamond, expanded 1.85 kg/m <sup>2</sup> , galvanized		10.00
092 058-0900	Metal lath, flat rib, 3 mm high, 1.25 kg painted		6.00
092 058-1000	Metal lath, flat rib, 3 mm high, 1.25 kg foil backed		42.00
092 058-1200	Metal lath, flat rib, 3 mm high, 1.85 kg/m <sup>2</sup> galvanized		27.30
092 058-1900	Metal lath, high rib, 10 mm, 1.85 kg/m <sup>2</sup> , galvanized		19.26
092 058-2400	Metal lath, high rib, 19 mm, 2.93 kg/m <sup>2</sup> , painted		17.85
092 058-2500	Metal lath, high rib, 19 mm, 3.66 kg/m <sup>2</sup> , painted		29.55
092 058-2700	Metal lath mesh, painted 0.82 kg		6.60
092 058-2800	Metal lath mesh, painted 1.63 kg		9.76
092 058-3900	Metal lath, 1.54 kg diamond painted		9.13
092 058-5100	Metal lath, rib lath, painted, 1.25 kg		5.78
092 058-5400	Metal lath, rib lath, painted, 1.81 kg	↓	9.45
<b>092 100</b>	<b>GYPSUM PLASTER</b>		
<b>092 102</b>	<b>CEMENT PLASTER:</b>		



## DIVISION 09: FINISHES

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
092 102-0010	Ready mix cement plaster in 25 kg bags	BAG	28.00
<b>092 108</b>	<b>GYP SUM PLASTER:</b>		
092 108-0010	Ready mix gypsum plaster, in 25 kg bags	BAG	16.00
<b>092 116</b>	<b>PERLITE OR VERMICULITE PLASTER:</b>		
<b>092 600</b>	<b>GYP SUM BOARD SYSTEMS</b>		
<b>092 608</b>	<b>DRYWALL:</b>		
092 608-0150	Drywall, gypsum plasterboard, 9.5 mm thick, standard	SQM	3.90
092 608-0300	Drywall, gypsum plasterboard, 12.5 mm thick, standard		8.00
092 608-2000	Drywall, gypsum plasterboard, 15 mm thick, standard		9.75
092 608-3000	Drywall, gypsum plasterboard, 15 mm thick, fire resistant		10.30
092 608-3550	Drywall, gypsum plasterboard, 15 mm thick, water resistant		13.75
092 608-3560	Drywall, gypsum plasterboard, 18 mm thick, standard		13.00
092 608-3570	Drywall, gypsum plasterboard, 18 mm thick, fire resistant		13.55
092 608-3580	Drywall, gypsum plasterboard, 18 mm thick, water resistant		18.00
092 608-4300	Drywall, gypsum plasterboard, 18 mm thick fire & water resistant		19.50
092 608-5050	Drywall, 25 mm thick coreboard		15.75
092 608-5600	Drywall, sound deadening board, 6 mm gypsum		4.98
092 608-5650	Drywall, sound deadening board, 13 mm wood fiber		7.35
092 608-5700	Drywall, cement board, 6mm wood fiber		18.25
092 608-5800	Drywall, cement board, 9mm wood fiber		27.50
092 608-5900	Drywall, cement board, 12mm wood fiber	↓	35.70
<b>092 612</b>	<b>METAL STUDS, DRYWALL:</b>		
092 612-2200	Metal studs, drywall, non-load bearing, galvanized 25 ga., 63 mm wide	LM	2.47
092 612-2300	Metal studs, drywall, non-load bearing, galvanized 25 ga., 92 mm wide		3.02
092 612-2400	Metal studs, drywall, non-load bearing, galvanized 25 ga., 100 mm wide		3.22
092 612-2500	Metal studs, drywall, non-load bearing, galvanized 25 ga., 150 mm wide		4.22
092 612-2600	Metal studs, drywall, non-load bearing, galvanized 20 ga.		4.20
092 612-2900	Metal studs, drywall, non-load bearing, galvanized 20 ga., 100 mm wide		5.44
092 612-3000	Metal studs, drywall, non-load bearing, galvanized 20 ga., 150 mm wide		7.23
092 612-4000	Load bearing metal studs, structural, galvanized, 18 ga., 63 mm wide		6.36
092 612-4200	Load bearing metal studs, structural, galvanized, 18 ga., 92 mm wide		7.58
092 612-4300	Load bearing metal studs, structural, galvanized, 18 ga., 100 mm, wide		7.97
092 612-4400	Load bearing metal studs, structural, galvanized, 18 ga., 150 mm, wide		10.22
092 612-4600	Load bearing metal studs, structural, galvanized, 16 ga., 64 mm, wide		7.92
092 612-4900	Load bearing metal studs, structural, galvanized, 16 ga., 150 mm, wide	↓	12.77
<b>092 620</b>	<b>PARTITION WALL:</b>		
092 620-1600	Interior partition wall, 3.7m high, including metal studs, NLB, 25 ga., at 400 O.C., 90 mm wide, 13 mm, standard, gypsum drywall both sides, taped & finished	SQM	35.87
092 620-3000	Interior partition wall, 2.4 m high, including metal studs, NLB, 25 ga., at 400 O.C., 150 mm wide, 2 layers of 13 mm, water resistant gypsum drywall both sides, taped & finished		61.80



## DIVISION 09: FINISHES

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
092 620-3800	Interior partition wall, 3.7 m high, including metal studs, NLB, 25 ga., at 400 O.C., 150 mm wide, 2 layers of 16 mm, fire resistant or water resistant gypsum drywall 2 hr. rating both sides, taped & finished	↓	60.15

### 093 TILE

#### 093 100 CERAMIC TILE

#### 093 102 CERAMIC TILES & SHEETS:

093 102-5400	Ceramic tile 100 x 100 mm glazed	SQM	41.00
093 102-5800	Ceramic tile 150 x 150 mm glazed	↓	28.00
093 102-5810	Ceramic tile 200 x 200 mm glazed	↓	26.00
093 102-5820	Ceramic tile 300 x 300 mm glazed	↓	29.00
093 102-5840	Ceramic tile 100 x 100 mm unglazed	↓	41.00
093 102-5870	Ceramic tile 150 x 150 mm unglazed	SQM	34.00
093 102-5880	Ceramic tile 200 x 200 mm unglazed	↓	26.00
093 102-5900	Ceramic tile 300 x 300 mm unglazed	↓	29.00
093 102-6000	Ceramic tile 400 x 400 mm unglazed	↓	30.00
093 102-8000	Ceramic tile, bullnose, 100 mm	LM	16.80
093 102-8010	Ceramic tile, bullnose, 150 mm	↓	16.80
093 102-8020	Ceramic base tile 100 mm	↓	33.00
093 102-8040	Ceramic cove tile 100 mm	↓	35.00
093 102-8050	Ceramic cove tile 150 mm	↓	23.00

#### 093 500 GLASS MOSAICS

#### 093 501 GLASS MOSAICS:

093 501-0300	Glass mosaics 20 mm tile	SQM	199.00
093 501-0700	Glass mosaics 20 mm tile, color golds, silvers & specialties	"	1,417.00

#### 093 700 METAL TILE

#### 093 701 METAL TILE:

093 701-0010	Metal tile 1220 x 1220 mm sheet, 24 ga., tile pattern, stainless steel	SQ.M	570.00
093 701-0020	Metal tile 1220 x 1220 mm sheet, 24 ga., tile pattern, aluminized steel	"	301.00

### 094 TERRAZZO

#### 094 100 PORTLAND CEMENT TERRAZZO

#### 094 200 PRECAST TERRAZZO

#### 094 201 TERRAZZO, PRECAST:

094 201-0010	Terrazzo, precast, base, 150 mm high, straight	LM	8.50
094 201-0200	Terrazzo, precast, cove, 150 mm high	LM	11.55
094 201-1200	Terrazzo, floor tiles, non-slip 25 mm thick, 200 x 200 mm	SQM	14.70
094 201-1300	Terrazzo, floor tiles, non-slip 30 mm thick, 300 x 300 mm	↓	17.85
094 201-1500	Terrazzo, floor tiles, non-slip 30 mm thick, 400 x 400 mm	↓	34.00
094 201-1600	Terrazzo, floor tiles, non-slip 40 mm thick, 400 x 400 mm	↓	30.00
094 201-2400	Terrazzo stair tread 40 mm thick, 300 mm wide with nosing, 1.2 m long	LM	66.00
094 201-3600	Terrazzo stair tread & riser single piece, straight tread 300 mm, riser 160 mm, 1.2 m long with nosing	LM	85.00



## DIVISION 09: FINISHES

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
<b>095</b>	<b>ACOUSTICAL TREATMENT &amp; WOOD FLOORING</b>		
<b>095 100</b>	<b>ACOUSTICAL CEILINGS</b>		
<b>095 102</b>	<b>CEILING TILE:</b>		
095 102-0600	Ceiling tile,mineral fiber,vinyl coated 15 mm thick, 610 mm x 610 mm	SQM	17.85
095 102-0700	Ceiling tile,mineral fiber,vinyl coated 19 mm thick, 610 mm x 610 mm		33.00
095 102-0750	Ceiling tile,mineral fiber,vinyl coated 20 mm thick, 300 mm x 600 mm		23.00
095 102-0760	Ceiling tile,mineral fiber,vinyl coated 19 mm thick, 610 mm x 1220 mm		27.00
095 102-0900	Ceiling tile,mineral fiber, 19 mm thick,plain faced,fire rated		35.00
095 102-1000	Ceiling tile,mineral fiber, 20 mm thick,plastic coated faced,fire rated		36.00
095 102-1200	Ceiling tile,mineral fiber,aluminum faced 20 mm thick, 610 mm x 610 mm		43.00
095 102-1300	Ceiling tile, cement wood fiber, paint coated, 3.2mm thick, 603 x 603mm	↓	21.65
<b>095 104</b>	<b>SUSPENDED ACOUSTIC CEILING BOARDS:</b>		
095 104-0400	Suspended Acoustic Ceiling Boards, fiberglass board, random fissured 610 x610 mm or 610 x 1220 mm, 25 mm thick	SQM	25.00
095 104-0500	Suspended Acoustic Ceiling Boards, fiberglass board, film faced 610 x 610 mm or 610 x 1220 mm, 76 mm thick, thermal, 1.9 m2 K/W	SQM	35.00
095 104-0600	Suspended Acoustic Ceiling Boards, glass cloth faced fiberglass, 20 mm thick		45.00
095 104-0820	Suspended Acoustic Ceiling Boards, glass cloth faced fiberglass, 38 mm thick, nubby face		60.00
095 104-0930	Suspended Acoustic Ceiling Boards, mineral fiber boards, 15 mm thick, aluminum faced 610 mm x1220 mm		53.00
095 104-1000	Suspended Acoustic Ceiling Boards, mineral fiber boards, 16 mm thick, plastic coated face 610 mm x 1220 mm		17.85
095 104-1200	Suspended Acoustic Ceiling Boards, mineral fiber, 2 hour rating, 16 mm thick		25.20
095 104-1300	Suspended Acoustic Ceiling Boards, mirror faced panels, 24 mm thick, 610 x 610 mm		161.00
095 104-2100	Suspended Acoustic Ceiling Boards, polystyrene eggcrate, 10 mm x 10 mm x 13 mm cubes		32.00
095 104-2400	Suspended Acoustic Ceiling Boards, luminous panels, prismatic, acrylic		45.00
095 104-3600	Suspended Acoustic Ceiling Boards, perforated aluminum sheets, 0.61 mm thick corrugated, painted		47.00
095 104-3700	Suspended Acoustic Ceiling Boards, perforated aluminum sheets, 0.61 mm thick corrugated, plain	↓	42.00
<b>095 250</b>	<b>ACOUSTICAL SPACE UNITS</b>		
<b>095 254</b>	<b>SOUND ABSORBING PANELS:</b>		
095 254-0200	Sound absorbing panels, perforated steel facing, painted with fiberglass or mineral filler, no backs, 57 mm thick, modular, white or colored	SQM	210.00
095 254-0300	Sound absorbing panels, perforated steel facing, painted with fiberglass or mineral filler, no backs, 13 mm thick, modular, white or colored		9.00
095 254-0500	Sound absorbing panels, fiberglass panels, 1.2 m x 2.4 m x 25 mm thick, with glass cloth face	↓	62.00
<b>095 300</b>	<b>ACOUSTICAL INSULATION</b>		
<b>095 304</b>	<b>BARRIERS:</b>		
095 304-0010	Barriers, plenum, leaded vinyl, 2.34 kg/m2	SQM	55.00



## DIVISION 09: FINISHES

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
095 304-0300	Barriers,plenum,lead vinyl, 7.3 kg/m2		93.45
095 304-0900	Barriers,aluminum mesh,kraft,paperbacked		20.00
095 304-1000	Barriers,sheet lead, 0.45 kg., 0.397 mm thick	↓	51.00
<b>095 308</b>	<b>SOUND ATTENUATION:</b>		
095 308-0010	Sound attenuation,blanket, 25 mm thick	SQM	9.00
095 308-3000	Thermal or acoustical batt, 50 mm thick.	↓	13.00
095 308-4200	Fiberglass, reinforced baker board, 11 mm thick.	↓	47.00
<b>095 600</b>	<b>WOOD STRIP FLOORING</b>		
<b>095 604</b>	<b>WOOD:</b>		
095 604-3720	Wood,portable hardwood,prefinished panels,insulated with polystyrene, 25 mm thick	SQM	187.00
095 604-4000	Wood,maple,strip, 20 mm x 57 mm,select grade	↓	315.00
095 604-4300	Wood,maple,strip, 26 mm x 83 mm,select grade	↓	368.00
095 604-4600	Wood,oak,white or red, 20 x 57mm clear, select grade	SQM	300.00
095 604-5650	Wood,parquetry, 21 mm thick, select grade oak average	↓	472.00
095 604-6100	Wood,parquetry, 57 mm wide, prefinished prime grade white oak,average	↓	404.00
095 604-7000	Wood,parquetry, 8 mm thick, walnut or teak,average	↓	278.25
<b>096</b>	<b>FLOORING &amp; CARPET</b>		
<b>096 150</b>	<b>MARBLE FLOORING</b>		
<b>096 151</b>	<b>MARBLE &amp; GRANITE:</b>	<i>See also Div. 044554 &amp; 044651</i>	
<b>096 350</b>	<b>BRICK FLOORING</b>		
<b>096 354</b>	<b>FLOORING:</b>		
096 354-0200	Flooring,acidproof clay brick, 200 mm x 200 mm x 30 mm thick	SQM	68.25
096 354-0500	Flooring,pavers, 200 mm x 100 mm, 70 mm thick red	SQM	53.00
096 354-0580	Flooring,pavers, 250 mm x 125 mm, 70 mm thick red	"	53.00
<b>096 600</b>	<b>RESILIENT TILE FLOORING</b>		
<b>096 610</b>	<b>RESILENT:</b>		
096 610-0050	Resilient,asphalt tile, 3 mm thick,color	SQ.M	29.00
096 610-0800	Resilient base,cove,rubber or vinyl, 2 mm thick,standard colors, 150 mm high	LM	46.00
096 610-1500	Resilient base,cove,rubber or vinyl, 3 mm thick,standard colors, 100 mm high	"	40.00
096 610-1700	Resilient conductive flooring,rubber tile, 3 mm thick	SQM	102.00
096 610-1800	Resilient conductive flooring,homogeneous vinyl tile, 2 mm thick		54.00
096 610-2200	Resilient,cork tile,standard finish, 3 mm thick		76.00
096 610-2300	Resilient,cork tile,standard finish, 8 mm thick		126.00
096 610-2350	Resilient,cork tile,standard finish, 13 mm thick		149.00
096 610-2600	Resilient,cork tile,urethane finish, 8 mm thick		208.00
096 610-5500	Resilient polyvinyl chloride sheet, for gymnasium, 6 mm thick		147.00
096 610-5550	Resilient interlocking, slip resistant rubber flooring for gymnasium, 8 mm thick, black		178.50
096 610-5560	Resilient interlocking, slip resistant rubber flooring for gymnasium, 8 mm thick, color in dark brown, grey, green & red		178.50



## DIVISION 09: FINISHES

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
096 610-5600	Resilient polyvinyl chloride sheet, for gymnasium, 10 mm thick		147.00
096 610-5900	Resilient rubber sheet, 914 mm wide, 3 mm thick		42.00
096 610-6000	Resilient rubber sheet, 914 mm wide, 6 mm thick		92.00
096 610-6030	Resilient rubber tile, simulated terrazzo, 500 x 500 mm, 3 mm thick		175.35
096 610-6050	Resilient rubber tile, marbilized colors, 300 mm x 300 mm, 5 mm thick	↓	133.00
096 610-6700	Resilient, synthetic turf, 10 mm thick	SQM	158.00
096 610-6800	Resilient, synthetic turf, 8 mm thick		115.00
096 610-7200	Resilient, vinyl composition tile, 300 mm x 300 mm, 2 mm thick, embossed		28.00
096 610-7250	Resilient, vinyl composition tile, 300 mm x 300 mm, 2 mm thick, marbilized.		24.00
096 610-7300	Resilient, vinyl composition tile, 300 mm x 300 mm, 2 mm thick, solid		26.00
096 610-7350	Resilient, vinyl composition tile, 300 mm x 300 mm, 3 mm thick, marbilized		85.00
096 610-7400	Resilient, vinyl composition tile, 300 mm x 300 mm, 3 mm thick, solid		36.00
096 610-7500	Resilient, vinyl tile 300 mm x 300 mm, 1 mm thick, average		22.00
096 610-7650	Resilient, vinyl tile 300 mm x 300 mm, 3 mm thick, solid colors		36.00
096 610-7700	Resilient, vinyl tile 300 mm x 300 mm, 3 mm thick, marbilized or travertine pattern		34.00
096 610-7750	Resilient, vinyl tile 300 mm x 300 mm, 3 mm thick, florentine pattern, average		106.00
096 610-8200	Resilient, vinyl sheet, backed, 3 mm thick, average		34.00
096 610-8300	Resilient, vinyl sheet, backed, 6 mm thick, average		76.00
096 610-8310	Resilient, sit - on type, PVC skirting	↓	95.00
<b>096 850</b>	<b>SHEET CARPET</b>		
<b>096 852</b>	<b>CARPET:</b>		
096 852-0700	Carpet, nylon, level loop, 730 gram light traffic	SQM	44.00
096 852-0710	Carpet, nylon, tufted cut pile, 1200 grams medium traffic		49.00
096 852-0720	Carpet, nylon, tufted cut pile one level heavy duty		57.00
096 852-0730	Carpet, nylon, level loop 700 grams heavy traffic		63.00
096 852-0740	Carpet, polymid, level loop 500 grams light traffic		52.50
096 852-0750	Carpet, 40% wool 60% nylon 1500 - 1600 grams heavy duty		49.00
096 852-3100	Carpet, nylon tufted loop pile level, heavy duty		56.70
096 852-3220	Carpet, 90% acrylic 10% wool level loop 810 grams, medium traffic		67.00
096 852-3230	Carpet, 50% wool & 50% synthetic level loop 900 grams, heavy duty		54.00
096 852-3240	Carpet, wool synthetic, 950 grams, light duty		38.85
096 852-3350	Carpet, 100% polypropylene level loop, heavy traffic		44.00
096 852-3360	Carpet, 100% polypropylene tufted cut pile 1000 grams, heavy duty		51.00
096 852-3370	Carpet, 100% polypropylene tufted cut pile, medium duty		48.00
096 852-3380	Carpet, polypropylene loop pile tufted, light traffic		58.00
096 852-3390	Carpet, 100% nylon cut pile 1900 grams, heavy traffic		37.00
096 852-3510	Carpet, 100% dupont nylon antron plus teflon tufted cut pile, heavy duty		46.00
096 852-3520	Carpet, 100% polyester 100 grams, light traffic		54.00
096 852-3680	Carpet, 100% nylon cut pile medium traffic		28.00
096 852-3740	Carpet, 100% polyester cut pile 1500 grams, heavy traffic		30.00
096 852-3750	Carpet, 100% polyester cut pile 2000 grams, heavy traffic		33.00
096 852-5000	Carpet, 100% nylon cut pile light traffic		32.00
096 852-9200	Carpet, sponge felt pad, average		16.00




## DIVISION 09: FINISHES

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
096 852-9500	Printed Carpet	↓	26.25
<b>096 900</b>	<b>CARPET TILE:</b>		
096 900-1100	Carpet tile,tufted, 457mm x 457mm or 610 mm x 610 mm, 680 gram	SQM	82.00
096 900-1180	Carpet tile,tufted, 457mm x 457mm or 610 mm x 610 mm, 900 gram	↓	109.00
096 900-5060	Carpet tile,tufted, 457 mm x 457 mm or 610 mm x 610 mm, 1190 gram	↓	198.00
<b>098</b>	<b>SPECIAL COATINGS</b>		
<b>098 150</b>	<b>GLAZED COATINGS</b>		
<b>098 150</b>	<b>WALL COATINGS:</b>		
098 150-0010	Wall coatings,acrylic glazed coatings	DRUM	205.00
098 150-0300	Wall coatings,epoxy coatings	"	295.00
<b>099</b>	<b>PAINTING &amp; WALL COVERINGS</b>		
<b>099 100</b>	<b>EXTERIOR PAINTING:</b>		
<b>099 102</b>	<b>PAINTS:</b>		
099 102-0010	Plastic emulsion interior paint	LTR.	6.00
099 102-0020	Acrylic emulsion interior paint		7.00
099 102-0030	Acrylic emulsion exterior paint		8.00
099 102-0040	Polyvinyl acetate emulsion exterior paint		11.00
099 102-0060	Acrylic emulsion semigloss paint		10.00
099 102-0070	Acrylic emulsion gloss paint		11.00
099 102-0090	Silicone water repellant for exterior masonry		22.00
099 102-0100	Texture Gloss paint		13.00
099 102-0140	Flat alkyd paint		14.00
099 102-0150	Satin finish paint		14.00
099 102-0160	High gloss enamel paint		14.00
099 102-0180	Acrylic enamel paint		18.00
099 102-0190	Polyurethane texture gloss finish paint	↓	30.00
099 102-0200	Wood varnish	LTR.	30.00
099 102-0210	Putty for interior or exterior on wood and metal	KG	25.00
099 102-0230	Aluminum finish paint	LTR	19.00
099 102-0250	Red oxide metal primer		8.00
099 102-0260	Zinc/iron oxide primer		23.00
099 102-0270	Exterior synthetic enamel paint		16.00
099 102-0280	Industrial quick dry primer		16.00
099 102-0300	Bituminous paint		2.50
099 102-0310	Galvanizing paint		23.00
099 102-0320	Semigloss silicone alkyd paint	↓	11.34
<b>099 700</b>	<b>WALLPAPER</b>		
<b>099 701</b>	<b>WALL COVERING</b>		
099 701-0100	Wall covering,copper sheets, 0.6 mm thick,vinyl backing	SQM	121.00
099 701-0300	Wall covering,copper sheets, 0.6 mm thick,phenolic backing		156.00
099 701-0600	Wall covering, cork tiles, light or dark, 300 mm x 300 mm x 5 mm thick		79.00



## DIVISION 09: FINISHES

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
099 701-0700	Wall covering, cork tiles, light or dark, 300 mm x 300 mm x 8 mm thick		81.00
099 701-0900	Wall covering, cork tiles, light or dark, 300 mm x 300 mm x 6 mm, basket weave		125.00
099 701-1000	Wall covering, cork tiles, light or dark, 300 mm x 300 mm x 13 mm thick, natural, non-directional		122.00
099 701-1200	Wall covering, cork tiles, granular surface, 300 x 910 mm x 13 mm thick		27.30
099 701-1600	Wall covering, cork tiles, polyurethane coated, 300 mm x 300 mm x 8 mm thick		119.00
099 701-1900	Wall covering, cork wallpaper, paperbacked, colored	↓	59.00
099 701-2100	Wall covering, flexible wood veneer, 0.8 mm thick, plain woods	SQM	48.00
099 701-2800	Wall covering, acrylic, modified, semi-rigid PVC, 1 mm thick		32.00
099 701-3300	Wall covering, vinyl, fabric-backed, medium weight		15.75
099 701-3700	Wall covering, wallpaper, solid pattern, low cost paper		15.75
099 701-3900	Wall covering, wallpaper, basic patterns, average cost paper		15.75
099 701-4100	Wall covering, wallpaper, paper backed, flame treatment, average	↓	17.85



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A decorative geometric pattern, resembling a complex tessellation of stars and polygons, is located in the top right corner of the page. The pattern is rendered in a light gray color against a white background.

# Division 10

## Specialties

**DIVISION 10 : SPECIALTIES**

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
<b>101</b>	<b>CHALKBOARDS, COMPARTMENTS &amp; CUBICLES</b>		
<b>101 100</b>	<b>CHALKBOARDS</b>		
<b>101 104</b>	<b>CHALKBOARDS</b>		
101 104-0140	Chalkboard, one side, 1200 mm x 1800 mm, green, aluminum frame	EA	417.00
101 104-0340	Whiteboard, 900 mm x 1800 mm with stand, double side		515.00
101 104-0500	Whiteboard, 1200 mm x 2400 mm, aluminum frame		348.00
101 104-0800	Whiteboard, 900 mm x 200 mm, aluminum frame		735.00
101 104-1750	Whiteboard, 600 mm x 900 mm, aluminum frame		65.00
101 104-1850	Whiteboard, 900 mm x 1500 mm, aluminum frame		198.00
101 104-2100	Whiteboard, 900 mm x 1800 mm, aluminum frame		220.00
101 104-2200	Whiteboard, 1200 mm x 1800 mm, aluminum frame		275.00
101 104-5300	White marker board, 1200 mm x 900 mm H, 12 nos. dry markers, eraser, map hook and map rail	↓	150.00
<b>101 600</b>	<b>TOILET COMPARTMENTS</b>		
<b>101 602</b>	<b>PARTITIONS, TOILET</b>		
101 602-0200	Cubicles toilet partition, painted metal	SQM	1,470.00
101 602-0300	Cubicles toilet partition, plastic laminate on particle board		1,720.00
101 602-0400	Cubicles toilet partition, porcelain enamel		2,850.00
101 602-4000	Screens, entrance, 1.4 m high, 1.2 m wide, marble		787.00
101 602-4300	Screens, entrance, 1.4 m high, 1.2 m wide, plastic laminate on particle board		1,260.00
101 602-4600	Urinal screen, 457 mm wide, marble, 1.2 m high		368.00
101 602-4700	Urinal screen, 457 mm wide, plastic laminate	↓	945.00
<b>101 850</b>	<b>SHOWER COMPARTMENTS</b>		
<b>101 852</b>	<b>PARTITIONS, SHOWER:</b>		
101 852-0200	Shower cabinet, floor mounted, no plumbing, including base & fiberglass door, painted steel, 25 mm thick walls	EA	1,380.00
101 852-2400	Shower cabinet, glass stalls, floor mounted with doors, chrome on brass		2,750.00
101 852-2700	Shower cabinet, glass stalls, floor mounted with doors, anodized aluminum		1,860.00
101 852-4500	Shower Door, sliding tempered glass, 1.2 m opening		504.00
101 852-5120	Shower enclosure, floor mounted, tempered glass, anodized aluminum frame, 2 panel & door, corner unit, 810 mm x 810 mm		900.00
101 852-5900	Tub/shower enclosure, floor mounted tempered glass, alum. frame, average	↓	750.00
<b>102</b>	<b>LOUVERS, CORNER PROTECTION &amp; ACCESS FLOORING</b>		
<b>102 100</b>	<b>METAL WALL LOUVERS</b>		
<b>102 104</b>	<b>LOUVERS</b>		
102 104-0500	Louvers aluminum with screen, residential, 610 mm x 762 mm	EA	693.00
102 104-2250	Louvers, aluminum, 20 mm deep, 150 mm diameter	EA	281.00
<b>102 600</b>	<b>WALL &amp; CORNER GUARDS</b>		



## DIVISION 10 : SPECIALTIES

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
<b>102 604</b>	<b>CORNER GUARDS</b>		
102 604-0300	Corner guards, steel angle, 100 mm x 100 mm x 8 mm, 12 kg/m	LM	97.00
102 604-0500	Cast iron wheel guards, 915 mm high	EA	434.00
<b>102 608</b>	<b>CORNER PROTECTION</b>		
102 608-0100	Corner protection, stainless steel, 16 ga., 89 mm leg	LM	132.00
102 608-0500	Corner protection, vinyl acrylic, 76 mm leg	LM	32.00
<b>102 612</b>	<b>WALLGUARD</b>		
102 612-0500	Wall guard rail, neoprene, aluminum backing, 38 mm x 50 mm	LM	85.00
102 612-1200	Wall guard, bed bumper, vinyl acrylic, aluminum retainer, 530 mm long	EA	90.00
102 612-1400	Bumper, vinyl cover, aluminum retainer 38 mm x 70 mm	LM	90.00
102 612-3010	Wall Guard, Handrail/bumper, bracket mounted, flat rail, 140 mm	LM	120.00
<b>102 700</b>	<b>ACCESS FLOORING</b>		
<b>102 705</b>	<b>PEDESTAL ACCESS FLOORS</b>		
102 705-0100	Access floor, particle board with metal covering, 600 mm x 600 mm x 30 mm on snap prop stringers 200 mm high	SQM	295.00
102 705-0300	Access floor, aluminum panels 600 mm x 600 mm x 40 mm on stringers 600 mm high		315.00
102 705-0400	Access floor, steel panels with carpet covering on stringer 600 mm high		340.00
102 705-0700	Access floor, steel panels with high pressure laminate covering, stringers 600 mm high		250.00
102 705-0800	Access floor, extra heavy duty steel panels 600 x 600 x 30 mm with vinyl covering, stringer up to 600 mm high	↓	265.00
102 705-0850	Access floor, fire stop, 900 mm long, upto 600 mm high	EA	1,050.00
<b>103</b>	<b>FIREPLACES, EXT. SPECIALISTS &amp; FLAGPOLES</b>		
<b>103 050</b>	<b>PREFABRICATED FIREPLACES</b>		
<b>103 054</b>	<b>FIREPLACE, PREFABRICATED</b>		
103 054-0100	Fireplace, prefabricated free standing with hood & screen, average	EA	3,163.65
103 054-0500	Fireplace, chimney, double wall, stainless steel, 180 mm diameter	LM	297.15
103 054-2100	Fireplace, built-in, 914 mm hearth, radiant, with recirculating fan	EA	1,958.25
103 054-2400	Fireplace, built-in, 1.2 m hearth, radiant	EA	3,238.20
<b>103 520</b>	<b>GROUND SET FLAGPOLES</b>		
<b>103 524</b>	<b>FLAGPOLE</b>		
103 524-0300	Flagpole, aluminum, tapered, 9 m high	EA	2,349.90
103 524-0600	Flagpole, aluminum, tapered, 15 m high		6,326.25
103 524-3300	Flagpole, fiberglass, tapered, 12.0 m high		5,108.00
103 524-3500	Flagpole, fiberglass, tapered, 18.0 m high		5,586.00
103 524-4700	Flagpole, concrete, direct imbedded installation, internal halyard, 12 m high		5,722.50
103 524-4800	Flagpole, galvanized steel, with base plate, anchor bolts, pulley and plastic ball, 7.70 m	↓	3,360.00
<b>103 540</b>	<b>WALL MOUNTED FLAGPOLES</b>		
<b>103 544</b>	<b>FLAGPOLE</b>		
103 540-0100	Flagpole structure mounted, fiberglass, vertical wall set, 7 m long	EA	1,197.00



## DIVISION 10 : SPECIALTIES

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
103 540-1300	Flagpole structure mounted, aluminum, vertical wall set, tapered, with base 6 m	EA	3,313.00
<b>104</b>	<b>IDENTIFYING &amp; PEDESTRIAN CONTROL DEVICES</b>		
<b>104 100</b>	<b>DIRECTORIES</b>		
<b>104 104</b>	<b>DIRECTORY BOARDS</b>		
104 104-0100	Directory boards, plastic, glass covered, 914 mm x 1220 mm	EA	3,885.00
104 104-1000	Directory boards, outdoor, weatherproof, black plastic, 914 mm x 914 mm		2,520.00
104 104-2700	Building directory, aluminum, black felt panels, 2 doors, 914 mm x 1220 mm	↓	2,835.00
<b>104 150</b>	<b>BULLETIN BOARDS</b>		
<b>104 151</b>	<b>BULLETIN BOARD</b>		
104 151-0100	Bulletin board, cork board, 90 mm x 120 mm, aluminum frame	EA	85.00
104 151-0110	Bulletin board, cork board, 6.4 mm thick, with vinyl covering, reinforced with 6 mm wooden board back panel, 1200 mm x 900 mm, aluminum frame 17 mm x 15 mm x 2 mm		780.00
104 151-0120	Bulletin board, cork board, 6.4 mm thick, with vinyl covering, reinforced with 6 mm wooden board back panel, 900 mm x 600 mm, aluminum frame 17 mm x 15 mm x 2 mm		415.00
104 151-2200	Bulletin board, prefabricated, 6 mm cork, 1.2 m x 2.4 m with aluminum frame	↓	1,250.00
<b>104 300</b>	<b>SIGNS</b>		
<b>104 304</b>	<b>SIGNS:</b>		
104 304-0100	Sign, cast, aluminum, with 100 mm high & 13 mm deep letters	EA	399.00
104 304-0600	Sign, cast bronze, with 300 mm high & 20 mm deep letters		430.50
104 304-1600	Sign, cast bronze, with 200 mm high & 16 mm deep letters		430.50
104 304-1800	Sign, fabricated stainless steel, with 150 mm high, 50 mm deep letters		115.50
104 304-2200	Sign, fabricated stainless steel, with 610 mm high, 100 mm deep letters		399.00
104 304-4800	Signs, reflective aluminum, street signs, double face, 2-way with bracket		819.00
104 304-5100	Exit signs, 24 ga. aluminum, 360 mm x 300 mm surface mounted	↓	231.00
<b>105</b>	<b>LOCKERS, PROTECTIVE COVERS &amp; POSTAL SPECIALTIES</b>		
<b>105 050</b>	<b>METAL LOCKERS</b>		
105 050-0010	Locker, steel, baked enamel, 1.8 m high, 300 mm x 380 mm single tier, single door, average	EA	290.00
105 050-0300	Locker, steel, baked enamel, 1.9 m high, 900 mm x 450 mm single tier, double door, average		500.00
105 050-0400	Locker, steel, baked enamel, 1.8 m high, 600 mm x 450 mm two tier, double door, average		350.00
105 050-0500	Locker, steel, baked enamel, 1.9 m high, 900 mm x 450 mm two tier, four door, average		680.00
105 050-0600	Locker, steel, baked enamel, 1.9 m high, 900 mm x 450 mm three tier, six door, average	↓	900.00
105 050-0700	Locker, steel, baked enamel, 1.9 m high, 900 mm x 450 mm three tier, nine door, average	EA	900.00
105 050-0800	Locker, steel, baked enamel, 1.9 m high, 900 mm x 450 mm three tier, twelve door, average	EA	1,250.00
105 050-3100	Wall mounted lockers, 4 persons with coat bar, 1.2 m wide x 457 mm deep x 305 mm high	EA	300.00
<b>105 380</b>	<b>CANOPIES</b>		



## DIVISION 10 : SPECIALTIES

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
<b>105 384</b>	<b>CANOPIES</b>		
105 384-0700	Canopy, wall hung, fiber glass, 6 m x 3.65 m	EA	10,566.15
105 384-7500	Walkway cover, fiber glass, 5.6 m x 3.66 m, installed on steel structure beams back to back, average	EA	11,628.75
<b>106</b>	<b>PARTITIONS &amp; STORAGE SHELVING</b>		
<b>106 050</b>	<b>WIRE MESH PARTITION</b>		
<b>106 052</b>	<b>PARTITIONS, WOVEN WIRE</b>		
106 052-0600	Partition, woven wire, channel frame, 38 mm diamond mesh, 10 ga. wire, painted wall panels, 1.2 m wide, 3 m high	EA	304.50
106 052-0900	Partition, woven wire, channel frame, 38 mm diamond mesh, 10 ga. wire, painted wall panels, 3 m long, 0.6 m wide	EA	235.20
<b>106 150</b>	<b>DEMOUNTABLE PARTITION</b>		
<b>106 152</b>	<b>PARTITIONS, MOVABLE OFFICE</b>		
106 152-0050	Demountable partition 10 cm thick, fire rated gypsum board 12.5 mm with wall vinyl covering & fiber glass insulation, with aluminum main frame	SQM	240.00
106 152-0100	Demountable partition 10 cm thick, fire rated gypsum board 12.5 mm with wall steel covering & fiber glass insulation, with aluminum main frame	↓	310.00
106 152-0150	Demountable partition 10 cm thick, fire rated gypsum board 12.5 mm with wall fabric covering & fiber glass insulation, with aluminum main frame	SQM	290.00
106 152-0200	Demountable half single clear glazed partition 10 cm thick, fire rated gypsum board 12.5 mm with wall vinyl covering & fiber glass insulation, with aluminum main frame		310.00
106 152-0250	Demountable half single clear glazed partition 10 cm thick, fire rated gypsum board 12.5 mm with wall steel covering & fiber glass insulation, with aluminum main frame		380.00
106 152-0300	Demountable half single clear glazed partition 10 cm thick, fire rated gypsum board 12.5 mm with wall fabric covering & fiber glass insulation, with aluminum main frame		360.00
106 152-0350	Door unit semi solid, complete w/ hinges, handles, frame & locks, mahogany veneer, 0.88 x 2.10 m	↓	1,350.00
106 152-0400	Demountable partition, upright frame of painted extruded aluminum slotted section with 26 mm thick, honey comb core, panelled both sides with 9 mm thick chipboard covered with fabric, 1.6 m L x 1.6 m H x 50 mm thick	UNIT	1,706.00
106 152-0450	Demountable partition, upright frame of painted extruded aluminum slotted section with 26 mm thick, honey comb core, panelled both sides with 9 mm thick chipboard covered with fabric, 2.4 m L x 1.6 m H x 50 mm thick	UNIT	2,623.00
106 152-0900	Demountable partition, vinyl clad gypsum system on 64 mm steel studs, 2.75 m high, 76 mm thick	LM	864.00
106 152-1000	Demountable partition, fabric clad gypsum system on 64 mm steel studs, 2.75 m high, 95 mm thick		497.00
106 152-1300	Demountable partition, steel clad gypsum system on 64 mm steel studs, 2.75 m high, 76 mm thick	↓	938.00
106 152-1900	Demountable partition system, aluminum framing, vinyl clad hardboard, paper honeycomb core panel, 64 mm thick, 2.75 m	↓	826.00
106 152-3100	Demountable partition, movable steel walls, modular system, 2.75 m high, 1.2 m wide, baked enamel, prefinished	SQM	938.00
106 152-3200	Demountable partition, movable steel walls, modular system, 2.75 m high, 1.2 m wide, fabric clad steel	SQM	852.00
106 152-5310	Demountable partition, trackless wall, cork finish, semi-acoustic, 40 mm thick, average	SQM	549.00
106 152-6100	Demountable partition, modular office system, w/ prehung steel door, 76 mm thick, honeycomb core panels 3.6 m x 3.6 m, double wall	EA	9,785.00
<b>106 300</b>	<b>PORTABLE PARTITIONS</b>		



**DIVISION 10 : SPECIALTIES**

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
<b>106 302</b>	<b>PARTITIONS, HOSPITAL</b>		
106 302-0010	Curtain track, box channel, ceiling mounted	LM	35.00
106 302-0310	Curtain, nylon mesh tops, fire resistant, 370 gram/m2, polyester cloth, 2.75 m ceiling mounted	LM	71.00
<b>106 304</b>	<b>PARTITIONS, PORTABLE</b>		
106 304-2600	Partitions, portable, divider panels, free standing, fiber core, fabric face straight, 1.8 m long, 1.5 m high	LM	665.00
106 304-3750	Acoustical panels, 60 to 90 noise reduction coefficient, 1.5 m long, 1.8 m high	LM	980.00
<b>106 520</b>	<b>PANEL PARTITIONS</b>		
<b>106 522</b>	<b>PARTITIONS, FOLDING LEAF</b>		
106 520-1100	Folding partition, steel, acoustical, 44 to 60 kg/m2, vinyl faced, average	SQM	2,625.00
106 520-1700	Folding partition, aluminum framed, acoustical, to 3.7 m high, 27 kg/m2, average	SQM	2,048.00
<b>106 550</b>	<b>ACCORDION PARTITIONS</b>		
<b>106 552</b>	<b>PARTITIONS, FOLDING ACCORDION</b>		
106 552-0300	Partitions, folding accordion, vinyl covered, frame not included, residential, 6 kg/m2, 2.4 m maximum height	SQM	1,312.00
106 552-0600	Partitions, folding accordion, vinyl covered, frame not included, commercial, 9.7 kg/m2, 5 m maximum height	SQM	1,838.00
106 552-0900	Partitions, folding accordion, vinyl covered, frame not included, accoustical, 15 kg/m2, 5 m maximum height	SQM	2,363.00
<b>106 750</b>	<b>STORAGE &amp; SHELVING</b>		
<b>106 752</b>	<b>PARTS BINS</b>		
106 750-0100	Parts bins, metal, gray baked enamel finish, 1.9 m high, 914 mm wide, 12 bins, 457 x 300 mm, 300 mm deep	EA	970.00
<b>106 754</b>	<b>SHELVING</b>		
106 754-0100	Shelving, metal, industrial, cross-braced, 2000 mm height, 970 mm length, 300 mm depth, 7 shelf levels (6 opening), 200 kg/level capacity	EA	403.00
106 754-1500	Shelving, fully enclosed, sides and back, 914 mm wide, 300 mm deep		567.00
106 754-4000	Shelving, pallet rack, steel frame, 2 m height, 2.5 m length, 900 mm depth, 3100 kg/level capacity, 3 level		1,645.00
<b>107</b>	<b>TELEPHONE SPECIALTIES</b>		
<b>107 550</b>	<b>TELEPHONE ENCLOSURES</b>		
<b>107 551</b>	<b>TELEPHONE ENCLOSURE</b>		
107 550-0300	Telephone enclosure, shelf type, wall hung, average	EA	1,650.00
107 550-0600	Telephone enclosure, booth type, painted steel, indoor or outdoor, average		12,000.00
107 550-1300	Telephone enclosure, outdoor, acoustical, on post		3,750.00
<b>108</b>	<b>TOILET &amp; BATH ACCESSORIES</b>		
<b>108 200</b>	<b>BATH ACCESSORIES</b>		
<b>108 204</b>	<b>BATHROOM ACCESSORIES</b>		
108 204-0200	Curtain rod, stainless steel, 1.5 m long, 32 mm diameter	EA	130.20
108 204-0300	Curtain rod, aluminum, 130 - 220 cm		78.00
108 204-0600	Towel dispenser and waste receptacle, 60.6 liter capacity		1,775.00
108 204-0700	Waste receptacle 10 Liter capacity, chrome		147.00



## DIVISION 10 : SPECIALTIES

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
108 204-1100	Grab bar, straight, 32 mm diameter, stainless steel, 914 mm long		109.00
108 204-1150	Grab bar, 2.5 cm dia., 60 cm long, chrome		124.00
108 204-1200	Grab bar, straight, 38 mm dia., stainless steel, 610 mm long		407.00
108 204-1500	Tub bar, stainless steel, 32 mm diameter, 610 mm x 914 mm		407.00
108 204-2350	Hand dryer, stainless steel 1000 watt wall mounted		735.00
108 204-2600	Coat strip, stainless steel, 4 hook, 914 mm long		245.00
108 204-2700	Coat strip, chrome, 4 hook		110.00
108 204-3200	Mirror with stainless steel frame, 1200 mm x 750 mm		668.00
108 204-3300	Mirror with stainless steel frame, 1.7 m x 600 mm		1,239.00
108 204-3700	Mirror with 127 mm stainless steel shelf, 20 mm sq. frame, 1220 x 610 mm		1,628.00
108 204-4100	Mop holder strip, stainless steel, 5 holders, 1220 mm long		389.00
108 204-4200	Napkin/tampon dispenser, recessed		2,507.00
108 204-4300	Napkin/tampon dispenser, recessed 27 x 14 x 7 cm, chrome		184.00
108 204-4600	Soap dispenser, stainless steel, surface mounted, liquid		139.00
108 204-4650	Soap dispenser, 1/2 liter, chrome, surface mounted, liquid		139.00
108 204-4700	Soap dispenser, chrome, surface mounted, powder		155.00
108 204-5000	Soap dispenser, recessed, stainless steel, liquid		693.00
108 204-5100	Soap dispenser, recessed, stainless steel, powder		449.00
108 204-5440	Soap dish, stainless steel, surface mounted		180.00
108 204-5450	Soap dish, chrome+glass, surface mounted		50.00
108 204-5480	Soap dish chrome, recessed		120.00
108 204-5520	Soap dish, with grab bar surface mounted		187.00
108 204-5560	Soap dish, with grab bar recessed		187.00
108 204-5600	Shelf, stainless steel, 127 mm wide, 18 ga., 610 mm long	↓	199.00
108 204-5700	Shelf, chrome with brackets + glass shelf	EA	137.00
108 204-6000	Toilet seat cover dispenser, stainless steel, recessed		245.00
108 204-6050	Toilet seat cover dispenser, stainless steel, surface mounted		116.00
108 204-6100	Toilet tissue dispenser, surface mounted, stainless steel, single roll		251.00
108 204-6200	Toilet tissue dispenser, surface mounted, chrome, single roll		251.00
108 204-6500	Towel bar, stainless steel, 760 mm long		110.00
108 204-6550	Towel bar, stainless steel, 50 mm long		40.00
108 204-6700	Towel dispenser, stainless steel, surface mounted		358.00
108 204-6750	Towel dispenser, chrome, surface mounted		170.00
108 204-7000	Towel holder, hotel type, 2 guest size	↓	100.00
108 204-7100	Swing towel holder, chrome	EA	80.00
108 204-7200	Towel shelf, stainless steel, 610 mm long, 200 mm wide		127.00
108 204-7300	Towel rack, chrome		127.00
108 204-7400	Tumbler holder		55.00
108 204-7500	Tumbler holder, chrome + glass		175.00
108 204-7505	Hook		20.00
108 204-7510	Paper holder with cover		65.00
108 204-7700	Wall urn ash receiver, surface mount, 280 mm long		247.00
108 204-8000	Waste receptacles, stainless steel, with top, 50 liter		1,060.00

**DIVISION 10 : SPECIALTIES**

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
108 204-8100	Waste receptacles, chrome, with cover	↓	159.00
<b>108 208</b>	<b>MEDICINE CABINETS</b>		
108 208-0010	Medicine cabinets, with mirror, stainless steel frame, 400 mm x 560 mm, unlighted	EA	1,062.00
108 208-0020	Medicine cabinets, instruments with two glass doors		1,125.00
108 208-0030	Medicine cabinets, top glass/down metal		1,125.00
108 208-0040	Medicine cabinets, stainless steel, sliding mirror doors, 600 mm x 480 mm x 210 mm, lighted		409.00
108 208-0500	Medicine cabinets, metal with aluminum frame, sliding mirror doors, 1780 mm x 800 mm x 360 mm	↓	1,050.00
<b>108 800</b>	<b>SCALES</b>		
<b>108 801</b>	<b>SCALES</b>		
108 801-0300	Scales, dial type, 5 metric ton capacity, 3.5 m x 2.5 m platform	EA	24,000.00
108 801-0400	Scales, 10 metric ton capacity, steel platform, 2.4 m x 2 m platform		16,000.00
108 801-1100	Truck scales, incl. steel weigh bridge, dial type, mech., 18 m x 3 m platform, 80 metric ton capacity		98,000.00
108 801-1640	Truck scale, digital electronic, 60 metric ton capacity, 15 m x 3 m platform		88,000.00
108 801-3300	Low profile electronic warehouse scale, not incl. printer, 2 m x 1.5 m platform, 5 metric ton capacity	↓	24,500.00
<b>109</b>	<b>WARDROBE &amp; CLOSET SPECIALTIES</b>		
<b>109 010</b>	<b>COAT RACKS/WARDROBES</b>		
<b>109 011</b>	<b>COAT RACKS &amp; WARDROBES</b>		
109 011-1400	Utility hook strips, 10 mm x 64 mm x 860 mm long, 12 hooks	EA	250.00



A decorative geometric pattern, resembling a complex tessellation of stars and polygons, is located in the top right corner of the page. It is rendered in a light gray tone against a white background.

# Division 11

## Equipment

## DIVISION 11: EQUIPMENT

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
<b>110</b>	<b>EQUIPMENT</b>		
<b>110 200</b>	<b>SECURITY / VAULT EQUIPMENT</b>		
<b>110 261</b>	<b>SAFE:</b>		
110 261-0100	Safe for offices 4 hours rating 1.5 m x 0.8 m x 0.5 m	EA	20,708.00
110 261-0200	Safe, office 1 hour rating external dimension 650 mm x 636 mm x 532 mm, weight 160 kgs		7,560.00
110 261-0300	Safe, office 1 hour rating external dimension 1000 mm x 636 mm x 532 mm, weight 160 kgs		8,662.50
110 261-0400	Safe, office 1 hour rating external dimension 1350 mm x 636 mm x 532 mm, weight 160 kgs		10,185.00
110 261-0800	Safe, money, 1 hour fire rated 0.23 m X 0.36 m X 0.36 m	↓	1,312.50
<b>110 300</b>	<b>TELLER &amp; SERVICE EQUIPMENT</b>		
<b>110 301</b>	<b>BANK EQUIPMENT:</b>		
110 301-3100	Bank undercounter with cash tray	STATION	2,588.00
110 301-4600	Bank Teller door, 2125 mm x 1014 mm, weight 140 kgs	EA	9,318.00
110 301-5560	Bank safety deposit boxes, 75 mm x 255 mm opening, average	OPENING	6,258.00
110 301-5570	Bank safety deposit boxes, 1255 mm x 255 mm opening, average		4,436.00
110 301-5580	Bank safety deposit boxes, 255 mm x 255 mm opening, average	↓	3,491.00
110 301-5800	Bank pass through window, bullet-resist screen., 32 mm polycast material	SQM	3,094.50
110 301-6200	Bank Twenty four( 24) hour teller, single unit, automated deposit, cash and memo	SQM	136,500.00
<b>110 400</b>	<b>ECCLESIASTICAL EQUIPMENT</b>		
<b>110 401</b>	<b>MOSQUE EQUIPMENT:</b>		
110 401-0050	Book shelve unit, hardwood, 1.0 m high, 1 m long, 300 mm wide, including handling, shelves at 300 mm O.C.	EA	630.00
110 401-0100	Chandelier, crystal, 3 meter diameter, with winch., 5 meter high, average		165,217.50
110 401-0150	Chandelier, crystal, 3 meter diameter, with winch., 7 meter high, average		197,274.00
110 401-0200	Mihrab 2.5 m high, 1.2 m wide, oak veneer casement including furring.		5,250.00
110 401-0600	Minbar, wood, deluxe, w/10 riser, solid cherry, and with built-in microphone		10,500.00
110 401-1000	Minaret crescent bronze upto 2 m high		59,220.00
110 401-2000	Sound system equipment, rack with amplifier, tape recorder and 4 minaret loud speakers	↓	11,555.00
<b>110 500</b>	<b>LIBRARY EQUIPMENT</b>		
<b>110 501</b>	<b>LIBRARY EQUIPMENT:</b>		
110 501-1010	Bookshelf, steel, 2.30 m high, 250 mm shelf, double face	EA	2,535.75
110 501-1100	Bookshelf, steel, 2.30 m high, 250 mm shelf, single face		1,843.00
110 501-1100	Bookshelf, steel, 2.30 m high, 200 mm shelf, single face		1,657.95
110 501-1100	Bookshelf, steel, 2.30 m high, 300 mm shelf, single face		2,027.00
110 501-1100	Bookshelf, steel, 2.30 m high, 2.10 m shelf, single face		1,823.85
110 501-1100	Magazine Shelving, 2.30 m high, 300 mm deep, single face		1,021.65
110 501-2500	Carrels, hardwood, 910 mm x 610 mm, average	↓	1,575.00
<b>110 600</b>	<b>THEATER / STAGE EQUIPMENT</b>		
<b>110 601</b>	<b>STAGE EQUIPMENT:</b>		
110 601-0100	Control Panelboards with 20 dimmers & breakers, average	EA	13,125.00
110 601-0600	Curtain track, straight, heavy duty	LM	216.30
110 601-0700	Curtain track, curved sections	LM	656.25



## DIVISION 11: EQUIPMENT

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
110 601-2500	Stage Spotlight, follow spot, with transformer, 2500 W	EA	6,153.00
110 601-3000	Stage Light Stationery spot, fresnel quartz, 200 mm lens, 2500 W		1,963.50
110 601-3100	Stage Light, spotlight, par 64 black with color frame		309.75
110 601-3500	Stage Light Ellipsoidal quartz, 1000 W, 300 mm lens	↓	1,102.50
<b>110 604</b>	<b>MOVIE EQUIPMENT:</b>		
110 604-2600	Movie projector, 16 mm with pedestal, 24 V - 250 W Halogen lamp, average	EA	12,600.00
110 604-2610	Movie projector, 16 mm with pedestal, 550 W Xenon-arc lamp, average	EA	25,200.00
110 604-3000	Projection screens, rigid, in wall, acrylic, 6 mm thick	SQM	1,009.00
110 604-3300	Projection screens,rigid,acrylic,13 mm thick	SQM	1,176.00
110 604-3320	Theater projection screens, matte white, including frames	SQM	105.00
<b>111 020</b>	<b>BARBER SHOP EQUIPMENT</b>		
<b>111 021</b>	<b>BARBER EQUIPMENT:</b>		
111 021-0050	Chair, hydraulic, movable, average	EA	9,450.00
111 021-0200	Wall hung styling station with mirrors, average	EA	2,625.00
<b>111 040</b>	<b>CASH REGISTER / CHECKING</b>		
<b>111 041</b>	<b>CHECKOUT COUNTER:</b>		
111 041-0010	Checkout Counter,Supermarket conveyor, 2 m long, single belt	EA	8,925.00
111 041-0020	Checkout Counter,Supermarket conveyor, 2.5 m long, single belt		12,180.00
111 041-2000	Register, cashier,average		1,575.00
111 041-2100	Register, cashier, IBM	↓	11,983.00
<b>111 050</b>	<b>DISPLAY CASES</b>		
<b>111 051</b>	<b>REFRIGERATED FOOD CASES:</b>		
111 051-0500	Freezer,self contained,upright,glass door, 2.18 m3	EA	19,000.00
111 051-0600	Frozen food,chest type 3.6 m long	EA	3,918.00
<b>111 100</b>	<b>LAUNDRY / DRY CLEANING</b>		
<b>111 101</b>	<b>LAUNDRY EQUIPMENT:</b>		
111 101-2050	Dry cleaners, electric, 12 kg capacity	EA	45,176.83
111 101-2150	Dry cleaners, electric, 27 kg capacity		83,125.00
111 101-3600	Folders, blankets & sheets		97,963.00
111 101-4500	Ironers, institutional, 2.8 m, single roll		204,282.00
111 101-6200	Combination washer/extractor, 23 kg capacity	↓	30,215.00
<b>111 320</b>	<b>PROJECTION SCREENS</b>		
<b>111 321</b>	<b>PROJECT SCREENS:</b>		
111 321-0100	Projection screens, wall or ceiling hung, glass beaded, manually operated, average	SQM	168.00
111 321-1200	Projection screens, heavy duty, electric operated, 18 SQM	SQM	6,615.00
<b>111 400</b>	<b>SERVICE STATION EQUIPMENT</b>		
<b>111 401</b>	<b>AUTOMOTIVE:</b>		
111 401-0600	Air compressors, electric, 5 HP, 220 V, standard controls or dual controls	EA	11,025.00
111 401-1100	Diesel /Gasoline dispenser, 84 Liter per minute, complete with connections	EA	13,650.00
111 401-2800	Hydraulic lift ( piston) air or oil operated, 5 Ton capacity	EA	14,700.00
111 401-2850	Hydraulic lift ( piston) air or oil operated, 7 Ton capacity		18,900.00
111 401-2950	Hydraulic lift ( piston) air or oil operated, 14 Ton capacity	↓	28,840.00



## DIVISION 11: EQUIPMENT

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
111 401-3000	Lube equipment, with grease & oil pump, oil & grease reel with valve, not including piping	SET	18,900.00
<b>111 500</b>	<b>PARKING CONTROL EQUIPMENT</b>		
<b>111 501</b>	<b>PARKING EQUIPMENT:</b>		
111 501-0500	Parking equipment, automatic gate barrier, 1/3HP motor connected to a heavy duty gear reducer, microprocessor based controller and 3 m single wood gate arm painted with black and white diagonal stripes	EA	13,125.00
111 501-1400	Parking equipment, ticketer, to dispense a time and date stamped ticket, 50 mm x 100 mm size, including a lighted clock face 0-23 hours/minutes, "Please Take Ticket" sign, operated by loop detector		20,085.00
111 501-3500	Parking equipment, passport plus card reader on stand with module and power supply		10,500.00
111 501-3600	Parking equipment, passport plus hand held computer with access software		6,300.00
111 501-3700	Parking equipment, auditor powerpad fee computer with universal power supply, cash drawer and cables, basic software including two fee tables, six attendants, 15 statistical reports		34,505.00
111 501-3800	Parking equipment, fee display with 25 mm LCD characters, booth mount	▼	6,300.00
<b>111 600</b>	<b>LOADING DOCK EQUIPMENT</b>		
<b>111 601</b>	<b>LOADING DOCK:</b>		
111 601-0010	Loading dock, bumpers rubber blocks 114 mm thick, 250 mm high, 350 mm long	EA	236.25
111 601-0020	Loading dock, bumpers rubber blocks 150 mm thick, 500 mm high, 280 mm long		493.50
111 601-0030	Loading dock, bumpers rubber blocks molded L-shape 450 mm x 450 mm x 100 mm (L x W x T)		753.90
111 601-0040	Loading dock, bumpers rubber blocks laminated 350 mm x 250 mm x 100 mm (L x W x T)		462.00
111 601-0920	Loading dock, extruded rubber bumpers, T section, 560 mm x 560 mm x 76 mm		236.25
111 601-4400	Loading dock platform lifter, fixed, 1.8 m x 2.4 m, 2 ton capacity		28,350.00
111 601-4700	Loading dock, levelers, hydraulic for trucks 10 ton capacity, 2.1 m x 1.8 m		15,225.00
111 601-4800	Loading dock, levelers, hydraulic for trucks 20 ton capacity, 2.1 m x 3.6 m		30,607.50
111 601-4900	Loading dock, levelers, mechanical for trucks 10 ton capacity, 2.1 m x 1.8 m	▼	11,865.00
<b>111 700</b>	<b>WASTE HANDLING EQUIPMENT</b>		
111 700-0010	Waste handling, compactors, 120V, 110 kg/hr, chute fed	EA	39,249.00
111 700-1150	Heavy duty industrial compactor, upto 4 CUM capacity		97,891.00
111 700-1200	Combination shredder / compactor 2200 kg/hr.		163,152.00
111 700-3750	Incinerator, electric, 45 kg/ hour, average	▼	38,728.00
<b>111 900</b>	<b>DETENTION EQUIPMENT</b>		
<b>111 901</b>	<b>DETENTION EQUIPMENT</b>		
111 901-0500	Bar front, rolling, 22 mm bars, 100 mm O.C., 2.1m high, 1.5 m wide, with hardware	EA	11,845.00
111 901-1000	Detention, doors and frames, 915 x 2.1m, complete, w/hardware	EA	8,791.00
<b>114</b>	<b>FOOD SERVICE, RESIDENTIAL, DARKROOM, ATHLETIC EQUIPMENT</b>		
<b>114 000</b>	<b>FOOD SERVICE EQUIPMENT</b>		
<b>114 002</b>	<b>APPLIANCES</b>		
111 002-0050	Cooking range, free standing, 1 oven, 4 burners stainless steel	EA	11,450.00
114 002-0900	Counter top cook top, 4-burner, standard, average		3,800.00



## DIVISION 11: EQUIPMENT

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
114 002-2200	Deep freeze, painted white, 80 x 70 x 85cm		2,200.00
114 002-2210	Deep freezer, painted white, 150 x 70 x 85cm		3,950.00
114 002-2750	Under counter dishwasher	▼	10,000.00
114 002-2755	Domestic dishwasher	EA	3,200.00
114 002-3200	Hand Dryer 30S, 10 A surface, revolving nozzle stanped white		1,250.00
114 002-3205	Domestic dryer, average		2,600.00
114 002-3210	Dryer, coin-operation or without coin-operartion		12,711.00
114 002-3300	Food waste disposer. 1HP		2,200.00
114 002-3305	Disposer sink		1,980.00
114 002-4150	Domestic type hood for range		1,800.00
114 002-4160	Wall type exhaust hood, stainless steel		9,250.00
114 002-6150	Refrigerator cabinet type, 2 door, 220V/ 1Ph/ 60Hz, Temp: 0-10C°		13,500.00
114 002-6155	Domestic upright refrigerator		3,680.00
114 002-6650	Domestic washing machine automatic		3,600.00
114 002-6670	Washing machine, electric vegetable washing and drying machine with a washing capacity of 5kg in 2-3 minutes.		10,350.00
114 002-7400	Water softener, automatic, to 26 grains/L.	▼	2,152.00
<b>114 004</b>	<b>KITCHEN EQUIPMENT:</b>		
114 004-0010	Single deck bake oven with base, 2 pan bake oven, stainless steel, 220V/1-3P/ 60Hz	EA	23,500.00
114 004-0015	Electric convection oven, 6-trays cap. With stand		24,708.00
114 004-1300	Broiler 36" counter top, 240/1P/60Hz, thermostatically controlled, 300 to 700FH. 5 heavy duty grates, 914 x 635 x 394mm.		9,500.00
114 004-1400	Broiler 24" counter top, 240/1P/60Hz, thermostatically controlled, 300 to 700FH, 3 heavy duty grates, 610 x 635 x 394mm.		7,250.00
114 004-1405	Broiler without oven, standard		9,460.00
114 004-1410	Broiler without oven, standard 600mm wide		12,490.00
114 004-1850	Coffee URN twin tank, 25 gallons/hour		16,640.00
114 004-1855	Coffee URN twin tank, 6 gallons/ hour, 5.3KW, 2W, 27A, 150KVA Trans. f/ pump.	▼	11,000.00
114 004-2350	Refrigeration, stainless steel w/double glass door, 142 x 80 x 205cm	EA	17,342.00
114 004-2355	Refrigerated table work top size: 1832 x 700 x 580H, -2 to +10C° with 3-doors		17,000.00
114 004-2360	Twin tank juice dispenser, 20 liter capacity/ tank		5,750.00
114 004-2365	Deverage dispenser with 2 separate bowls, capacity 37 Ltrs. Bowl cap. 18.5 Ltrs.		3,500.00
114 004-2700	Dishwasher upright, 9-kw rinse booster, 1.2kw wash pump, 1200 dish/ hr wash cap.		17,500.00
114 004-2710	Dishwasher, undercounter dishwasher, 780-700 dishes per hour, stainless steel.		10,288.00
114 004-2715	Dishwasher, undercounter, 220V/1P/60Hz, fixed rack, power upper and lower rotating, wash and rinse arms.	▼	10,000.00
114 004-2720	Dishwasher left to right w/dryer, rack conveyor, with blower dryer, 6 Kw, incl. 5 racks from left to right, pump, 3HP, tank, heater, 9Kw washing capacity 2160 plates/ hr.	EA	88,500.00
114 004-2725	Dishwasher, hood type with capacity of 1280-1920 dish/ hour		44,750.00
114 004-3800	Food mixers, 17.5 liters capacity, 2-speed, stainless steel		27,450.00
114 004-3805	Food mixers, aluminum grey, floor stand, 220V/1P/60Hz, 20Ltrs.		17,250.00
114 004-4300	Freezers, reach-in 2.33 M³, double door, 220V/1P/60Hz, 1440 x 800 x 2020H		16,500.00
114 004-4310	Freezers, reach-in 1.16 M³, single door, 220V/1P/60Hz, 720 x 800 x 2020H		11,000.00
114 004-4750	Fryer, deep, single well 15 liters, 40 x 90 x 85cm, stainless steel		8,486.00



## DIVISION 11: EQUIPMENT

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
114 004-4760	Fryer, deep, double bowl 15 liters each, 80 x 90 x 85cm, stainless steel.		15,690.00
114 004-4765	Fryer, single, 12 Liter, 220-400/3P/60Hz,		7,500.00
114 004-5550	Gas griddle on open cabinet, 80 x 90 x 85cm		11,176.00
114 004-5555	Griddle counter Tops 48", S/S front side & top, aluminum steel		7,250.00
114 004-6050	Ice cube maker, 90kg/24 hour, 76 x 61 x 93cm		9,930.00
114 004-6060	Ice cube maker, 260 kg/ 24 hour, 90 x 76 x 107cm		13,250.00
114 004-6065	Ice maker maker, 100Kgs/ day, 230V/ 1Ph/ 60Hz		9,250.00
114 004-6070	Compact under counter ice making machine, storage capacity 290 Lbs.		11,500.00
114 004-6350	Gas boiling pan 150 liters indirect heat, 80 x 90 x 85cm		24,415.00
114 004-6360	Gas boiling pan 100 liters indirect heat, 80 x 90 x 85cm		23,960.00
114 004-6365	Tri leg stationary kettle, 40 gallon with double pantry faucet		38,750.00
114 004-6900	Gas cooking range with 6-burners and oven, 120 x 90 x 85cm		11,450.00
114 004-6905	Restaurant range, stainless steel exterior background, 6 open burners		8,750.00
114 004-8850	Steamer, electric 16.5 KW, stainless steel		25,250.00
114 004-8860	Self cooking centre with UG 11 stand, rack height 1.60M, cap. 6x1/1 GN. 30 to 80 meal/ day, width 847mm, depth 771mm, height 757mm, connected load 10Kw.		20,300.00
114 004-8870	Coffee machine, with 1 or 2 brewing groups and electronic dosage, 10 liters		16,750.00
114 004-8880	Salad Bar unit capacity 197kg.	▼	22,000.00
<b>114 740</b>	<b>DARKROOM PROCESSING</b>		
<b>114 741</b>	<b>DARKROOM EQUIPMENT:</b>		
114 741-0250	Darkroom equipment, developing sink, 250 mm deep, with standard accessories	EA	20,414.00
114 741-0650	Darkroom Dryers, dehumidified filtered air, 1.2 m x 635 mm x 1.7 m high		10,815.00
114 741-2000	Darkroom Processors, automatic, color print, average	▼	25,750.00
<b>114 760</b>	<b>REVOLVING DARKROOM DOORS</b>		
<b>114 768</b>	<b>DARKROOM DOORS:</b>		
114 768-0020	Darkroom Revolving door, standard, 2 way, 1m diameter	OPENING	10,475.00
<b>114 800</b>	<b>ATHLETIC / RECREATIONAL</b>		
<b>114 801</b>	<b>HEALTH CLUB EQUIPMENT:</b>		
114 801-0050	Abdominal board,upholstered	EA	9,045.75
114 801-0200	Bicycle trainer		2,314.00
114 801-1300	Treadmill manual		2,958.00
114 801-1400	Treatment massage table,average	▼	2,652.00
<b>114 805</b>	<b>SCHOOL EQUIPMENT:</b>		
114 805-1000	Basketball backstops, wall mounted, 1.8 m extended, fixed, average	EA	5,562.00
114 805-4200	Exercise ladder, 4.8 m x 480 mm, suspended		2,987.00
114 805-4210	High bar, floor plate attached		7,725.00
114 805-4240	Parallel bars	▼	16,995.00
<b>115</b>	<b>INDUSTRIAL &amp; PROCESS EQUIPMENT</b>		
<b>115 000</b>	<b>INDUSTRIAL EQUIPMENT</b>		
<b>115 010</b>	<b>SPECIALIZED EQUIPMENT</b>		
<b>115 011</b>	<b>VOCATIONAL SHOP EQUIPMENT:</b>		
115 011-0700	Drill press, floor mounted, 300 mm, 0.5 HP	EA	700.00



## DIVISION 11: EQUIPMENT

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
115 011-4300	Welder AC arc, 230 A capacity	EA	1,390.00
<b>116</b>	<b>LABORATORY, PLANETARIUM, OBSERVATORY EQUIPMENT</b>		
<b>116 000</b>	<b>LABORATORY EQUIPMENT</b>		
<b>116 001</b>	<b>LABORATORY EQUIPMENT:</b>		
116 001-0010	Laboratory, cabinets, base, door units, metal	LM	2,350.00
116 001-0300	Laboratory cabinet, drawer units	LM	550.00
116 001-1650	Laboratory, counter tops, not incl. base cabinets, stainless steel, average	SQM	1,850.00
116 001-2020	Laboratory Fume hood, with countertop & base, not including HVAC, simple	LM	23,750.00
<b>117</b>	<b>MEDICAL EQUIPMENT</b>		
<b>117 100</b>	<b>HOSPITAL EQUIPMENT</b>		
<b>117 102</b>	<b>CARDIAC EQUIPMENT:</b>		
117 102-0300	External cardiac compressor	EA	1,400.00
117 102-0400	External transthoracic stimulation through external adhesive electrodes, complete with adapter cable & disposable electrodes	EA	15,682.24
<b>117 104</b>	<b>CLEAN ROOM EQUIPMENT:</b>		
117 104-0100	Scrub station, stainless steel base, 1 bay 0.8 m	EA	31,820.00
117 104-0400	Stainless steel warm cabinet, solution 762 mm x 1880 mm x 457 mm	EA	46,103.70
<b>117 110</b>	<b>DENTAL EQUIPMENT</b>		
<b>117 110</b>	<b>DENTAL EQUIPMENT:</b>		
117 111-0300	Air compressor, average	EA	3,500.00
117 111-0400	Air compressor, oil free, wooden cabinet with ventilation and sound insulation		11,995.00
117 111-0600	Chair, electric or hydraulic, average		7,000.00
117 111-0700	Dental treatment unit complete with all accessories		29,500.00
117 111-3000	X-ray unit, wall, average	▼	11,013.50
<b>117 120</b>	<b>EMERGENCY EQUIPMENT:</b>		
117 120-0300	Plaster sink complete	EA	14,025.60
117 120-0600	Scale physician's, with height rod, made in USA	EA	2,625.00
<b>117 130</b>	<b>HYDROTHERAPY EQUIPMENT:</b>		
117 130-0400	Whirlpool bath, fixed, including mixing valves, stainless steel, 90 imperial gallon	EA	28,948.00
117 130-0700	Paraffin bath 325 K, auto controlled	EA	3,454.00
<b>117 140</b>	<b>INHALATION THERAPY EQUIPMENT:</b>		
117 140-0100	Inhaler	EA	36,722.00
117 140-0200	Lung air volume tester	EA	57,894.48
<b>117 150</b>	<b>LABORATORY EQUIPMENT:</b>		
117 150-0200	Fully automatic water still, with built-in solenoid valve	EA	11,000.00
117 150-0250	Distiller, water, steam heated 40 gallon		36,050.00
117 150-0300	Laboratory sterilizer, counter top, 3.31 liter capacity		13,500.00
117 150-0400	Laboratory sterilizer, counter top, 510 mm x 1010 mm x 530 mm		11,400.00
117 150-0800	Refrigeration, blood bank 0.47 CUM reach-in.	▼	38,800.00
<b>117 155</b>	<b>LAUNDRY HOSPITAL EQUIPMENT:</b>		
	<i>See also div. 111-101</i>		
117 155-0300	Dryer steam 200 kg	EA	55,000.00
117 155-0600	Flat ironer, 3 roller		695,250.00

## DIVISION 11: EQUIPMENT

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
117 155-0700	Folder 4 lane	↓	180,250.00
<b>117 165</b>	<b>MORTUARY EQUIPMENT:</b>		
117 165-0100	Autopsy table average	EA	72,100.00
117 165-0400	Mortuary refrigerator, end operated, 6 capacity	"	154,500.00
<b>117 174</b>	<b>NURSING STATION EQUIPMENT:</b>		
117 174-0200	Stainless steel, nourishment station, 72" x 30" x 80"	EA	174,585.00
<b>117 180</b>	<b>OBSTETRICAL &amp; NURSERY EQUIPMENT:</b>		
117 180-0100	Delivery table	EA	32,000.00
117 180-0200	Incubator with complete accessories	EA	13,000.00
<b>117 182</b>	<b>PHYSICAL THERAPY EQUIPMENT:</b>		
117 182-0200	Exercise chair	EA	4,201.00
117 182-0400	Treadmill, adjustable	EA	20,696.00
<b>117 190</b>	<b>STERILIZERS:</b>		
117 190-0200	Sterilizer with water ejector, general service, high vacuum with loading cart, transfer carriage, recessed model, 610 mm x 914 mm x 1524 mm	EA	470,457.00
<b>117 192</b>	<b>SURGICAL EQUIPMENT:</b>		
117 192-0100	Surgery table, minor, average	EA	16,500.00
117 192-0200	Surgery table, major, average		35,000.00
117 192-0300	Surgical light single arm		11,250.00
117 192-0500	Surgical light triple arm		15,000.00
117 192-0600	scrub surgical, stainless steel, single station, average	↓	39,400.00
<b>117 198</b>	<b>X-RAY EQUIPMENT:</b>		
117 198-0300	X-ray wall mounted, chest	EA	11,330.00
117 198-0400	X-ray automatic processor		135,187.00
117 198-0600	X-ray viewing equipment average	↓	2,750.00



A decorative geometric pattern, likely a traditional Islamic or Arabesque design, is located in the top right corner of the page. It features a complex, repeating lattice of lines forming various polygons and star-like shapes. The pattern is rendered in a light gray or off-white color against a slightly darker background.

# Division 12

## Furnishings

## DIVISION 12 : FURNISHINGS

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
<b>123</b>	<b>MANUFACTURED CASEWORK</b>		
<b>123 010</b>	<b>METAL CASEWORK</b>		
<b>123 015</b>	<b>KEY CABINETS:</b>		
123 015-0010	Key cabinet wall mounted, 60 key capacity	EA	235.00
123 015-0200	Key cabinet wall mounted, drawer type, 600 key capacity		1,560.00
123 015-0500	Key cabinet, tray type, 50 key capacity		210.00
<b>123 500</b>	<b>HOSPITAL CASEWORK</b>		
<b>123 501</b>	<b>CABINETS: For wood kitchen cabinets, see division 064-102</b>		
123 501-0500	Cabinets, hospital, base cabinets, laminated plastic	LM	1,565.60
123 501-1000	Cabinets, hospital, base cabinets, Stainless steel		1,957.00
123 501-1300	Hospital cabinet base trim, 100 mm high, enameled steel		238.00
123 501-1400	Hospital cabinet base trim, 100 mm high, stainless steel		365.00
123 501-1650	Hospital cabinet, counter top, laminated plastic, with backsplash		335.00
123 501-1900	Hospital cabinet, counter top, stainless steel with backsplash		880.00
123 501-2100	Hospital cabinet nurses station, door type, laminated plastic		1,980.00
123 501-2200	Hospital cabinet nurses station, door type, enameled steel		1,650.00
123 501-2300	Hospital cabinet nurses station, door type, stainless steel		2,255.00
123 501-2400	Hospital cabinet nurses station, door type, laminated plastic, for drawer type		3,300.00
123 501-2500	Hospital, wall cabinets, laminated plastic with glass doors		1,430.00
123 501-2600	Hospital, wall cabinets, enameled steel with glass doors		1,650.00
123 501-2700	Hospital, wall cabinets, stainless steel with glass doors		2,240.00
123 501-3500	Hospital, kitchen base cabinets, metal, average		410.00
123 501-3700	Hospital, kitchen wall cabinets, metal, average		440.00
123 501-5000	School cabinets, 610 mm deep, metal, 2.1 m high units		2,100.00
123 501-5450	School cabinets, wood custom fabricated, 610 mm deep, 810 mm high counter		1,320.00
<b>123 800</b>	<b>DISPLAY CASEWORK</b>		
<b>123 801</b>	<b>DISPLAY CASES:</b>		
123 801-0020	Display cases, all glass, aluminum, 1067 mm high x 914 mm x 300 mm deep	EA	1,460.00
123 801-0040	Display cases, all glass, solid oak wood, 1067 mm high x 914 mm x 300 mm deep		2,035.00
123 801-0060	Display cases, all glass, bronze frame, 1067 mm high x 914 mm x 300 mm deep		1,650.00
123 801-0100	Display cases, all glass, bronze frame, 1780 mm high x 1220 mm x 457 mm deep		2,860.00
123 801-2100	Display wall mounted cases, glass front, aluminum frame, non-illuminated, one section, 1525 mm x 1220 mm x 406 mm		2,950.00
123 801-2500	Display wall mounted cases, glass front, aluminum frame, non-illuminated, two section, 2.4 m x 1.2 m x 400 mm		4,200.00
123 801-2600	Display wall mounted cases, glass front, solid oak wood, non-illuminated, two section, 3048 mm x 1219 mm x 406 mm		3,400.00
123 801-2700	Display wall mounted cases, glass front, bronze frame, non-illuminated, two section, 3048 mm x 1219 mm x 406 mm		4,700.00
123 801-2700	Display wall mounted cases, glass front, aluminum frame, illuminated with fluorescent lights, two section, 3048 mm x 1219 mm x 406 mm	SECTION	2,860.00
<b>125</b>	<b>BLINDS</b>		
<b>125 100</b>	<b>BLINDS</b>		
125 103-0250	Blinds, interior, solid colors, horizontal, 50 mm aluminum slats, average	SQM	87.00



## DIVISION 12 : FURNISHINGS

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
125 103-0600	Blinds, interior, solid colors, horizontal, 50 mm steel slats, minimum		87.00
125 103-1500	Blinds, interior, solid colors, vertical, 127 mm PVC strips, average		186.00
125 103-1600	Blinds, interior, solid colors, vertical, 127 mm cloth strips, average		186.00
125 103-1800	Blinds, interior, solid colors, vertical, 100 mm aluminum slats, average	▼	280.00
125 103-1950	Blinds, interior, solid colors, vertical, mylar mirror-finish strips, to 200 wide, average	EA	375.00
125 103-3600	Blinds, interior, wood folding panels with movable louvers, 250 mm x 1010 mm each	EA	280.00
125 103-4000	Blinds, interior, wood folding panels with fixed louver type, 200 mm x 500 mm each	EA	280.00
<b>125 100</b>	<b>BLINDS</b>		
<b>125 201</b>	<b>SHADES:</b>		
125 201-0200	Shades basswood, roll-up, stain finish, 22 mm slats	SQM	235.00
125 201-0300	Shades basswood, vertical side slide, stain finish, 22 mm slats		186.00
125 201-0900	Shades, roll-up, mylar, non-heat reflective, single or double layer		321.00
125 201-1300	Shades, roll-up, vinyl coated cotton		321.00
125 201-1500	Shades, roll-up, vinyl heavy weight, decorated, 6 gauge	▼	321.00
<b>125 300</b>	<b>DRAPE/CURTAIN HARDWARE</b>		
<b>125 301</b>	<b>DRAPERY HARDWARE:</b>		
125 301-4000	Drape/curtain, traverse rods, adjustable, 710 mm to 1.2 m	EA	75.00
125 301-4020	Drape/curtain, traverse rods, adjustable, 1.2 m to 2.1 m		110.00
125 301-4060	Drape/curtain, traverse rods, adjustable, 2.1 m to 4.0 m	▼	75.00
125 301-4600	Balance, pinch pleated fabric, 300 mm deep, upto 1.4 m long, average	SQM	85.00
125 301-5000	Stationary rod	LM	35.00
<b>126</b>	<b>FURNITURE &amp; ACCESSORIES</b>		
<b>126 100</b>	<b>LANDSCAPE PARTITIONS</b>		
<b>126 107</b>	<b>POSTS:</b>		
126 107-0100	Posts portable, for pedestrian traffic control, brass with pedestal	EA	360.00
126 107-0600	Plastic covered ropes, 38 mm dia. for pedestrian traffic control posts	LM	70.00
<b>126 200</b>	<b>FURNITURE</b>		
<b>126 206</b>	<b>FURNITURE, DORMITORY:</b>		
126 206-0100	Dormitory, single bed complete, hardwood, average	EA	1,150.00
126 206-0200	Dormitory wardrobe, 1 m wide		1,150.00
126 206-1000	Dormitory, built-in chest, four drawer, average		900.00
126 206-1450	Dormitory, desk top, built-in, laminated plastic, 760 mm deep, average	▼	250.00
<b>126 210</b>	<b>FURNITURE, HOSPITAL:</b>		
126 210-0100	Hospital beds, manual, average	EA	2,500.00
126 210-0300	Hospital bed, manual and electric average		16,700.00
126 210-0600	Hospital bed, all electric, vantage Hi-Lo with side rails, average	▼	10,500.00
126 210-0700	Hospital bed, all electric, with side rails pan deck, average	EA	13,000.00
126 210-0800	Hospital bed, first aid, multi-function, average		4,300.00
126 210-0900	Hospital bed, fowler three movement with I.V. stand without siderails, manual, average		2,350.00
126 210-0910	Hospital bed, fowler two movement, manual, average		2,550.00
126 210-0920	Hospital bed, with two crank, 2 m pan deck, comfort care, manual, average		1,650.00



## DIVISION 12 : FURNISHINGS

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
126 210-0930	Hospital bed, with two crank, 2 m spring deck, comfort care, manual, average		1,450.00
126 210-0940	Chair lab, revolving with cushioned, backrest plastic		350.00
126 210-1100	Hospital, overbed table, laminated top		725.00
126 210-2000	Hospital TV set, 480 mm ceiling hung	▼	4,400.00
<b>126 214</b>	<b>FURNITURE, HOTEL:</b>		
126 214-0010	Hotel front desk, base cabinets, continuous shelf no top, 610 mm wide, quality granite top, provided with raceways for data & power wiring, average	LM	2,925.00
126 214-0400	Hotel guest room bed, queen size, oak, complete		2,560.00
126 214-0500	Hotel guest room bed, king size, oak, complete		2,450.00
126 214-1000	Hotel guest room, desk & chair, cherry		975.00
126 214-1600	Hotel guest room, dining table chair, quality fabric, padded and solid cherry		584.00
126 214-1700	Hotel guest room, dining table, cherry		2,300.00
126 214-2000	Hotel guest room, dresser unit, cherry, 1.6 m long	▼	1,520.00
126 214-2500	Hotel guest room, luggage table/rack	LM	1,400.00
126 214-3000	Hotel guest room, night table	LM	485.00
126 214-3500	Hotel guest room, refrigerator unit		1,050.00
126 214-4000	Hotel guest room, safe, with battery back-up		1,450.00
126 214-4200	Hotel guest room, sofa, quality all fabric		9,880.00
126 214-4500	Hotel guest, room, stand light 100 watt		150.00
126 214-5000	Hotel guest room, table lamp, 100 watt		85.00
126 214-6000	Hotel guest room, top chair, quality all fabric		275.00
126 214-7000	Hotel guest room, TV set, with tuner, 480 mm screen		3,550.00
126 214-0100	Library, attendant desk, 914mm x 1575mm x 737mm high		1,520.00
126 214-0200	Library, attendant desk, 1600mm x 800mm x 720mm high		1,525.00
126 214-0800	Library, card catalogue, 30 tray unit		3,400.00
126 214-1000	Library, carrels, single face, initial unit		1,150.00
126 214-4000	Library, dictionary stand, stationary	▼	735.00
<b>126 218</b>	<b>FURNITURE, LIBRARY:</b>		
126 218-0100	Library, attendant desk, 914 mm x 1575 mm x 737 mm high	EA	1,463.00
126 218-0200	Library, attendant desk, 1600 mm x 800 mm x 720 mm high		1,433.00
126 218-0800	Library, card catalogue, 30 tray unit		3,237.00
126 218-1000	Library, carrels, single face, Initial unit		1,055.00
126 218-4000	Library, dictionary stand, stationary		719.50
126 218-4020	Library, dictionary stand, revolving	▼	720.00
<b>126 222</b>	<b>FURNITURE, OFFICE:</b>		
126 222-0020	Office desk, metal double pedestal 760 mm high, 760 mm wide, 1.5 m long	EA	2,710.00
126 222-0030	Office desk, double pedestal, adjustable bar in file drawer, std. lock in each pedestal flush drawer pulls, top surface high pressure laminate, metal with wood top adjustable glides, 1600 mm x 800 mm x 740 mm high		2,925.00
126 222-0200	Office desk, cherry wood double pedestal 760 mm high, 900 mm wide, 1.8 m long		3,214.00
126 222-0300	Executive desk with side extension, 1.2 m wide, 2 m long, cherry		7,260.00
126 222-0400	Office metal laminated desk, single pedestal, 760 mm high, 760 mm wide, 1.5 m long		2,325.00
126 222-1500	Computer station unit with upper shelf, oak		380.00



## DIVISION 12 : FURNISHINGS

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
126 222-1510	Computer station unit, open shelving & storage beneath the top, three adjustable shelves on top of desk		575.00
126 222-6000	Office furniture, conference table 12 persons, wood, cherry veneered, boat, 1.35 m x 4 m		18,750.00
126 222-6070	Office conference table, 20 persons, solid wood, cherry facing, boat, 1.60 m x 5.4 m, ave.		36,521.00
126 222-6100	Office conference table, 24 persons, solid wood, oak facing, boat, 1.8 m x 6.0 m, ave.		44,500.00
126 222-6720	Office conference table, 8 persons, solid wood, oak facing, rectangle, 1.2 m x 2.2 m, ave.		6,300.00
126 222-6760	Office conference table, 12 person, solid wood, oak facing, rectangle, 1.2 m x 4.0 m, ave.		9,825.00
126 222-8000	Office leather sofa, 3 persons average, including handling into building		6,440.00
126 222-9000	Office filing cabinet, 4 drawers with sliding track, and roll-up door, all cherry	↓	9,800.00
<b>126 226</b>	<b>FURNITURE, RESTAURANT:</b>		
126 226-0200	Restaurant counter with base cabinets 610 mm, cherry and granite top	LM	2,800.00
126 226-2000	Restaurant, chair, bentwood side chair, metal, average	LM	210.00
126 226-2600	Chair upholstered seat and back, arms, oak at fabric	LM	275.00
<b>126 230</b>	<b>FURNITURE, SCHOOL:</b>		
126 230-2000	School desk, single pedestal, top book compartment, average	EA	680.00
126 230-2200	School desk, flip top, minimum	EA	125.00
<b>126 500</b>	<b>FURNITURE ACCESSORIES</b>		
<b>126 501</b>	<b>ASH/TRASH RECEIVERS</b>		
126 501-1060	Ash urn, cylindrical metal, 215 mm diameter, 655 mm high	EA	155.00
126 501-1065	Ash urn, cylindrical metal, 254 mm diameter, 685.8 mm high		475.00
126 501-1070	Ash urn, cylindrical metal, 405 mm diameter, 535 mm high		1,665.00
126 501-5040	Trash receptacle, metal, 405 mm diameter, 815 mm high		2,224.00
126 501-5050	Trash receptacle, metal, 431.8 mm x 203.2 mm x 381 mm high		135.00
126 501-5540	Trash receptacle, plastic with lid 184 L		1,350.00
126 501-5550	Trash receptacle, fiberglass trash bucket with handle 0.40 m x 0.45 m	↓	185.00
<b>126 900</b>	<b>FLOOR MATS &amp; FRAMES</b>		
<b>126 901</b>	<b>FLOOR MATS</b>		
126 901-0010	Floor mats including recessed frame, black rubber, 10 mm thick, solid	SQM	655.00
126 901-0050	Floor mats including recessed frame, black rubber, 10 mm thick, perforated	SQM	760.00
126 901-0150	Floor mats including recessed frame, in laid black rubber, 13 mm thick, perforated	SQM	755.00
<b>127</b>	<b>MULTIPLE SEATING</b>		
<b>127 100</b>	<b>MISCELLANEOUS SEATING</b>		
<b>127 101</b>	<b>SEATING</b>		
127 101-0010	Seating benches <i>See div. 028704</i>		
127 101-0100	Bleachers <i>See div. 028708</i>		
127 101-0500	Classroom, movable chair and desk type, average	SET	425.00
127 101-1000	Lecture hall seating, pedestal type, average	EA	455.00
127 101-2200	Auditorium chair, seating, veneer back, padded seat		1,260.00
127 101-2350	Auditorium chair, all veneered, fully upholstered, spring seat and with tablet arms	↓	2,180.00
<b>127 400</b>	<b>BOOTH &amp; TABLES</b>		

## DIVISION 12 : FURNISHINGS

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
<b>127 401</b>	<b>BOOTHS:</b>		
127 401-1000	Booth, banquet, upholstered seat and back, straight average	LM	955.00
127 401-1600	Booth, banquet, upholstered seat and back "L" or "U" shape, average	LM	1,150.00
127 401-3000	Booth, fixed seating, one piece plastic chair and plastic laminate table top including two seat, 610 mm x 610 mm table, average	EA	1,200.00
127 401-3200	Booth, fixed seating, one piece plastic chair and plastic laminate table top including four seat, 610 mm x 1220 mm table, average		1,560.00
127 401-4000	Free standing, wood fiber core with plastic laminate, single booth, 610 mm wide		450.00
127 401-4100	Free standing, wood fiber core with plastic laminate, single booth, 1220 mm wide		560.00

## 128 INTERIOR PLANTS & PLANTERS

<b>128 150</b>	<b>PLANTERS</b>		
<b>128 155</b>	<b>PLANTERS:</b>		
128 155-1000	Planter, fiberglass, hanging, 300 mm diameter, 178 mm high	EA	95.00
128 155-1500	Planter, fiberglass, rectangular, 1220 mm long, 400 mm high x 380 mm wide		620.00
128 155-2000	Planter, fiberglass, round, 300 mm diameter, 630 mm high		190.00
128 155-8750	Planter, wood, fiberglass liner square, 360 mm square, 380 mm high, average		143.00
128 155-9500	Planter, plastic cylinder, molded, 280 mm diameter, 280 mm high		90.00



A decorative geometric pattern, resembling a traditional Islamic or Arabesque design, is located in the top right corner of the page. It features a complex, repeating lattice of lines forming star and polygonal shapes, with some areas filled with a fine grid. The pattern is rendered in a light gray tone against a white background.

# Division 13

## Special Construction

## DIVISION 13 : SPECIAL CONSTRUCTION

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
<b>123</b>	<b>MANUFACTURED CASEWORK</b>		
<b>130 250</b>	<b>INTEGRATED CEILINGS</b>		
<b>130 251</b>	<b>INTEGRATED CEILINGS</b>		
130 251-1620	Integrated ceiling, 1.5 m x 1.5 m mod., mineral fiber panels	SQM	105.00
130 251-1630	Integrated ceiling, 1.5 m x 1.5 m mod., glass fiber panels	"	112.35
<b>130 300</b>	<b>SPECIAL PURPOSE ROOMS</b>		
<b>130 305</b>	<b>DARKROOMS</b>		
130 305-0010	Darkrooms shell, without door, 6 SQM, 2.4 m high	SQM	225.00
<b>130 360</b>	<b>CLEAN ROOMS</b>		
<b>130 361</b>	<b>CLEAN ROOM</b>		
130 361-3000	Clean room ceiling panel, vinyl coated foil on mineral substrate, non-perforated	SQM	42.00
130 361-6000	High efficiency particulate air filter 0.6 m x 1.2 m to 150 mm deep, beveled frame	"	892.50
<b>130 380</b>	<b>COLD STORAGE ROOMS</b>		
<b>130 381</b>	<b>REFRIGERATION</b>		
130 381-3100	Cold storage room finishes, fiber glass panels, 3 mm thick	SQM	65.00
130 381-3200	Cold storage room finishes, polyurethane and white polyester finish, 100mm thick	"	183.75
130 381-5200	Cold storage room, prefab walk-in, 2.2 m high, aluminum, including door, floors, partitions & refrigeration, 1.8 m x 1.8 m outside dimensions nominal	EA	29,384.25
130 381-5500	Cold storage room, prefab walk-in, 2.2 m high, GI Sheet, including door, floors, partitions & refrigeration, 3 m x 3 m outside dimensions nominal		35,633.32
130 381-5700	Cold storage room, prefab walk-in, 2.2 m high, aluminum, including door, floors, partitions & refrigeration, 3.6 m x 4.2 m outside dimensions nominal		45,171.00
130 381-6400	Cold storage freezers, complete units with doors & refrigeration, 3.6 m x 4.2 m x 2.2 m high		50,931.82
130 381-6600	Cold storage room shelving plated on galvanized steel wire type	↓	1,075.20
130 381-7500	Cold storage room, for air curtain doors, see division 083-722		
<b>130 520</b>	<b>SAUNAS</b>		
<b>130 521</b>	<b>SAUNA</b>		
130 521-0010	Sauna prefabricated including heater, glass door, light, controls, and complete with accessories, 2.1 m H, 1.8 m x 1.2 m, cedar on paneling	EA	20,160.00
130 521-0400	Sauna prefabricated including heater, glass door, controls and complete with accessories, 2.1 m H, 1.8 m x 1.5 m, cedar on paneling		22,050.00
130 521-0800	Sauna prefabricated including heater, glass door, controls and complete with accessories, 2.1 m H, 1.8 m x 2.75 m, cedar on paneling		29,820.00
130 521-1200	Sauna prefabricated including heater, glass door, controls, complete with accessories, 2.1 m H, 2.44 m x 2.4 m cedar on cedar		36,225.00
130 521-1400	Sauna prefabricated including heater, glass door, controls, complete with accessories, 2.1 m H, 2.44 m x 3 m cedar on paneling		39,900.00
130 521-1600	Sauna prefabricated including heater, glass door, controls, complete with accessories, 2.1 m H, 3 m x 3.6 m cedar on paneling	↓	46,200.00
130 521-1700	Sauna, door & frame only, cedar, 610 mm x 1800 mm with 300 mm x 450 mm double glazed toughened tinted glass window	EA	2,457.00
130 521-3000	Sauna, heaters 18 kW, electronic control with safety cut out features	EA	9,321.90



## DIVISION 13 : SPECIAL CONSTRUCTION

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
130 521-3100	Sauna, heaters only, floor standing to 5 CUM, room size 5 kW with controls	EA	8,190.00
<b>130 540</b>	<b>STEAM BATHS</b>		
<b>130 541</b>	<b>STEAM BATH</b>		
130 541-0010	Steam bath heater, including timer & head, single, 7 kW	EA	5,250.00
130 541-0020	Steam bath heater, including timer & head, single, 10 kW	"	5,670.00
<b>130 810</b>	<b>ACOUSTICAL ENCLOSURES</b>		
<b>130 811</b>	<b>ACOUSTICAL</b>		
130 811-0400	Acoustical reverb-chamber, 100 mm thick, complete	SQM	945.00
130 811-0900	Acoustical, sound-absorbing panels, painted metal	"	281.40
<b>130 910</b>	<b>RADIATION PROTECTION</b>		
<b>130 911</b>	<b>SHIELDING LEAD</b>		
130 911-0100	Laminated lead, 2 mm thick	SQM	892.50
130 911-0200	Shielded door frame 1.2 m x 2.1 mm, 2 mm thick lead, prepared to receive hardware	EA	997.50
130 911-0300	Shielding, lead sheets, 2 mm thick		153.30
130 911-0400	Shielding, lead sheets, 3 mm thick		315.00
130 911-0550	Shielded lead glass 6 mm thick, average		5,775.00
130 911-0700	Shielded window glass & frame, 6 mm thick, 610 mm x 910 mm	↓	2,782.50
130 911-2010	Shielded, X-ray viewing panels, clear lead plastic 7 mm thick with 0.3 mm lead thick, 11.24 kg/m <sup>2</sup>	SQM	3,990.00
130 911-2040	Shielded, X-ray viewing panels, clear lead plastic 22 mm thick with 1.0 mm lead thick, 35 kg/m <sup>2</sup>		5,985.00
130 911-2060	Shielded, X-ray viewing panels, clear lead plastic 46 mm thick with 2.0 mm lead thick, 73.3 kg/m <sup>2</sup>		8,820.00
130 911-7050	Shielded modular X-ray barriers, 2 sections, frames, 1.2 m wide, 1.9 m high including clear lead plastic window in the upper half & opaque leaded steel panel forming the lower half, 1 mm thick lead panel	↓	12,075.00
<b>131</b>	<b>PRE-ENGINEERED STRUCTURES, POOLS &amp; ICE RINKS</b>		
<b>131 200</b>	<b>PRE-ENG. STRUCTURES</b>		
<b>131 202</b>	<b>DOMES</b>		
131 202-1600	Bulk storage dome, steel framing & corrugated steel covering 227 SQM. area	SQM Floor	155.00
<b>131 212</b>	<b>PRE-ENGINEERED STEEL BUILDINGS</b>		
131 212-0100	Pre-engineered steel building rigid, clear span framing only, 26 ga. 12 m wide, 4.25 m eave height, 2400 m <sup>2</sup> floor area	SQM	170.00
131 212-4200	Pre-engineered building, double post frame, 26 ga. roofing and siding 45 m. wide, 7 m eave height		160.00
131 212-5500	Pre-engineered entrance canopy, framing, 1.2 m x 1.2 m		2,310.00
131 212-5550	Pre-engineered entrance canopy, incl. frame, 1.2 m x 2.4 m	↓	2,625.00
131 212-5700	Pre-engineered doors, hollow metal, self-framing, incl. butts, lockset and trim, single leaf 910 mm x 2.1 m high	EA	2,331.00
131 212-5950	Pre-engineered doors, hollow metal, self-framing, incl. butts, lockset and trim, single leaf 1.8 m x 2.4 m high		2,331.00
131 212-6050	Pre-engineered, framing only, for openings, 910 mm x 2100 mm		630.00
131 212-6100	Pre-engineered, framing only, for openings, 3000 mm x 3000 mm	↓	1,260.00
131 212-6250	Pre-engineered, flashings, 26 ga., corner or eave	LM	15.75

## DIVISION 13 : SPECIAL CONSTRUCTION

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
131 212-6550	Gutter, eave type, 26 ga.		42.00
131 212-8210	Skylight panels 0.91 m x 2.68 m		268.80
131 212-8250	Framing for skylight, fiberglass panels over 3 SQM	↓	23.10
<b>131 220</b>	<b>METAL BUILDING SYSTEMS</b>		
<b>131 221</b>	<b>BUS SHELTERS:</b>		
131 221-0100	Bus stop shelter, anodized aluminum framing structure, 50% ,6mm acrylic glazing in baked enamel finish panels, 3 sides only. 2.75m x 3.6m x 2.44m high	EA	7,770.00
131 221-0150	Bus stop shelters, aluminum frame, acrylic glazing 2.75 m x 3.66 m x 2.44 m high	„	11,025.00
<b>131 230</b>	<b>GREENHOUSES</b>		
<b>131 231</b>	<b>GREENHOUSE</b>		
131 231-0400	Prefabricated greenhouse, free standing, size 39 m x 9 m with all accessories and covered with plastic sheets	EA	5,250.00
131 231-0410	Prefabricated greenhouse, free standing, size 39 m x 9 m with all accessories and covered with fiberglass sheets	„	5,250.00
131 231-0700	Greenhouse shell only, 5 m long, 3.2 m wide	EA	2,625.00
<b>131 245</b>	<b>KIOSKS</b>		
131 245-0100	Round kiosk, prefabricated, 1.5 m diam. 2.4 m high, 25 mm insulated double wall, fiberglass	SQM Floor	472.50
<b>131 247</b>	<b>PORTABLE BOOTHS</b>		
131 247-0100	Prefabricated insulated booth, aluminum complete with doors, windows, 1.4 SQM, 2.4 m high average	SET	3,675.00
131 247-0300	Prefabricated insulated booth, aluminum complete with doors, windows, 3.0 SQM, 2.4 m high average	↓	4,515.00
131 247-1200	Prefabricated ticket booth, galv. steel, 1.2 m x 1.8 m, average	↓	2,625.00
<b>131 520</b>	<b>SWIMMING POOLS</b>		
<b>131 523</b>	<b>SWIMMING POOL EQUIPMENT</b>		
131 523-0300	Swimming pool, diving stand, stainless steel, 3 meter	EA	58,300.00
131 523-0600	Swimming pool, diving board 5 m long, fiberglass	↓	
131 523-0900	Swimming pool filter system, sand or diatomite type, including pump 85 GPM & chlorination system, pool size 75 SQM	↓	2,698.00
131 523-1100	Swimming pool, gutter system, stainless steel, with grating, with supply and drainage system	LM	1,760.00
131 523-1110	Swimming pool, gutter system grating, stainless steel, including supply drainage	„	2,805.00
131 523-1200	Swimming pool, ladders, heavy duty, stainless steel, 4 tread	EA	2,675.00
131 523-1800	Swimming pool, lifeguard chair, stainless steel, portable	↓	3,740.00
131 523-2100	Swimming pool, lights, underwater, 12V, with transformer	↓	1,501.50
131 523-2800	Swimming pool heaters, <b>See division 155150</b>		
131 523-3000	Swimming pool cover, reinforced vinyl	SQM	5 00
131 523-3300	Swimming pool slides, fiberglass, aluminum handrails & ladder, 1.8 m straight	EA	7,150.00
131 523-3400	Swimming pool slides, fiberglass, aluminum handrails & ladder, 3.2 m curved unit	„	8,925.00



**DIVISION 13 : SPECIAL CONSTRUCTION**

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
<b>132</b>	<b>TANKS, TANK COVERS, FILTRATION EQUIPMENT</b>		
<b>132 050</b>	<b>GROUND STORAGE TANKS</b>		
<b>132 051</b>	<b>TANKS</b>		
132 051-1000	Fiberglass storage tank 2 CUM	EA	680.00
132 051-1100	Fiberglass storage tank 8 CUM		3,300.00
132 051-1200	Fiberglass storage tank 40 CUM		20,800.00
132 051-3040	Steel, storage tank, 2 CUM capacity		2,750.00
132 051-3080	Steel, storage tank, 4 CUM capacity		4,400.00
132 051-3140	Steel, storage tank, 20 CUM capacity		15,950.00
132 051-3180	Steel, storage tank, 100 CUM capacity		47,300.00
132 051-3330	Steel, storage tank, double wall, 8 CUM capacity		15,400.00
132 051-3360	Steel, storage tank, double wall, 30 CUM capacity	▼	34,980.00



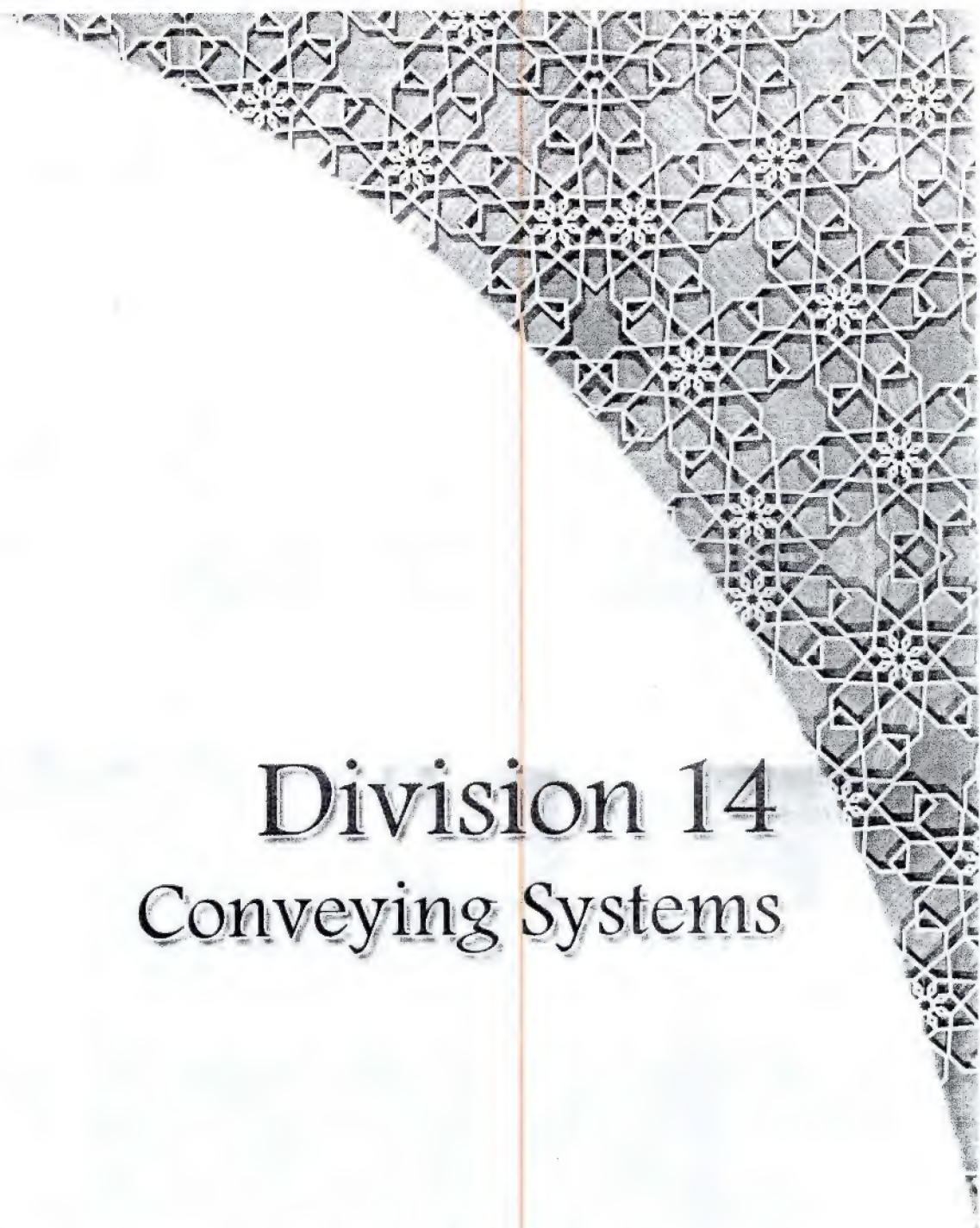
## الهدف:

التحكم بالوقت  
التحكم بالجودة  
التحكم بالتكلفة

- إدارة المشاريع  
- مرحلة قبل التصميم  
- مرحلة التصميم  
- مرحلة التنفيذ

- مراجعة التصميم  
- هندسة القيمة  
- التوافق  
- دراسات الجدوى



A decorative geometric pattern, resembling a complex tessellation or Islamic geometric art, is located in the top right corner of the page. It features a series of interlocking lines forming star-like and polygonal shapes, with some areas filled with a fine grid pattern. The pattern is rendered in a light gray color against a white background.

# Division 14

## Conveying Systems



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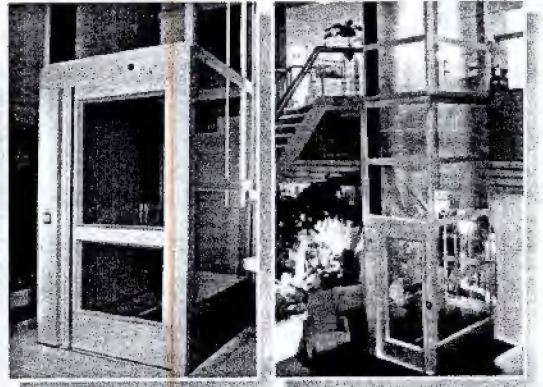
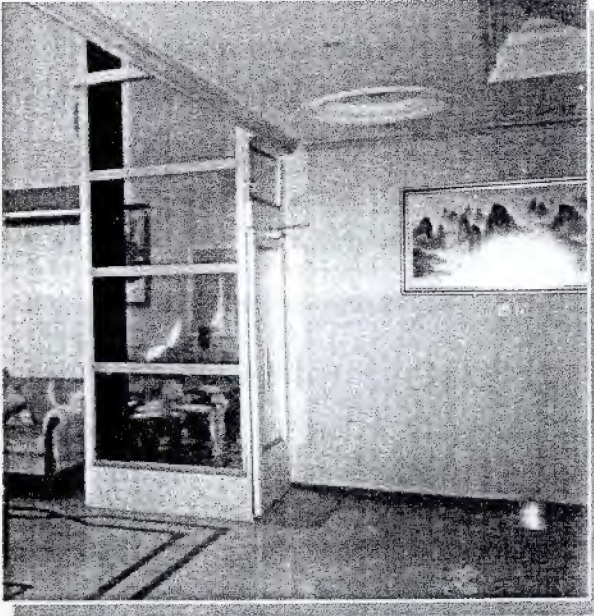
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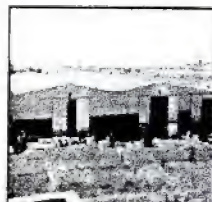
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## DIVISION 14: CONVEYING SYSTEMS

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
<b>141</b>	<b>DUMBWAITERS</b>		
<b>141 100</b>	<b>MANUAL DUMBWAITERS</b>		
<b>141 101</b>	<b>DUMBWAITERS:</b>		
141 101-0100	Manual dumbwaiter, 2 stops,average	EA	60,000.00
<b>141 200</b>	<b>ELECTRIC DUMBWAITERS</b>		
<b>141 201</b>	<b>DUMBWAITERS:</b>		
141 201-0010	Electric dumbwaiters, 2 stops,average	EA	400,000.00
<b>142</b>	<b>ELEVATORS</b>		
<b>142 010</b>	<b>ELEVATORS</b>		
<b>142 011</b>	<b>ELEVATORS</b>		
142 011-0700	Elevator freight, 6 storey,hydraulic, 1800 kg capacity, 0.5 m/second speed,average	EA	60,000.00
142 011-1000	Elevator freight, 6 storey,hydraulic, 1380 kg capacity, 0.76 m/second speed,average		400,000.00
142 011-1100	Elevator freight, 6 storey,hydraulic, 1800 kg capacity, 0.76 m/second speed,average		420,000.00
142 011-1120	Elevator freight, 6 storey,hydraulic, 2000 kg capacity, 0.76 m/second speed,average		480,000.00
142 011-2500	Elevator freight, 6 storey geared electric 1800 kg capacity, 2.0 m/second speed,average		500,000.00
142 011-2600	Elevator freight, 6 storey geared electric 3000 kg capacity, 2 m/second speed,average		560,000.00
142 011-3500	Elevator freight, 10 storey geared electric 1800 kg capacity, 1.5 m/second speed,average		580,000.00
142 011-3700	Elevator freight, 10 storey geared electric 3000 kg capacity, 2 m/ second speed,average		600,000.00
142 011-3800	Elevator freight, 10 storey geared electric 3800 kg capacity, 1.5 m/second speed,average		680,000.00
142 011-5200	Elevator freight, 15 storey geared electric 2200 kg capacity, 1.5 m/second speed,average		690,000.00
142 011-5800	Elevator freight, 15 storey geared electric 2700 kg capacity, 2.0 m/second speed,average		700,000.00
142 011-5920	Elevator freight, 16 storey geared electric 3800 kg capacity, 2.0 m/second speed,average		750,000.00
142 011-6400	Elevator freight, 20 storey geared electric 3000 kg capacity, 2 m/second speed,average		820,000.00
142 011-6700	Elevator freight, 20 storey geared electric 4500 kg capacity, 2 m/second speed,average		900,000.00
142 011-7000	Elevator passenger, 3 storey,hydraulic, 680 kg capacity, 0.63 m/second speed		180,000.00
142 011-7020	Elevator passenger, 5 storey,hydraulic, 900 kg capacity, 0.88 m/second speed		220,000.00
142 011-7160	Elevator passenger, 5 storey,hydraulic, 680 kg capacity, 0.50 m/second speed		200,000.00
142 011-7180	Elevator passenger, 5 storey,hydraulic, 900 kg capacity, 0.635 m/second speed		170,000.00
142 011-7260	Elevator passenger, 5 storey,hydraulic, 1100 kg capacity, 0.88 m/second speed		220,000.00
142 011-7320	Elevator passenger, 6 storey,hydraulic, 1300 kg capacity, 0.88 m/second speed	↓	260,000.00
142 011-7330	Elevator passenger, 8 storey, gearless electric 1000 kg capacity, 1 m/second speed, average	EA	240,000.00



## DIVISION 14: CONVEYING SYSTEMS

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
142 011-7340	Elevator passenger, 8 storey, gearless electric 800 kg capacity, 1 m/second speed, average		260,000.00
142 011-7350	Elevator passenger, 9 storey, gearless electric 800 kg capacity, 1 m/second speed, average		270,000.00
142 011-7800	Elevator passenger, 10 storey geared electric 970 kg capacity, 1.02 m/second speed, average		290,000.00
142 011-7900	Elevator passenger, 10 storey geared electric 1100 kg capacity, 1.20 m/second speed, average		320,000.00
142 011-8000	Elevator passenger, 10 storey geared electric 1380 kg capacity, 1.50 m/second speed, average		400,000.00
142 011-8060	Elevator passenger, 10 storey geared electric 1800 kg capacity, 1.77 m/second speed, average		460,000.00
142 011-8120	Elevator passenger, 10 storey geared electric 2200 kg capacity, 2.00 m/second speed, average		480,000.00
142 011-8380	Elevator passenger, 16 storey geared electric 1800 kg capacity, 2 m/second speed, average		520,000.00
142 011-8440	Elevator passenger, 16 storey geared electric 2200 kg capacity, 2 m/second speed, average		590,000.00
142 011-8600	Elevator passenger, 20 storey geared electric 1800 kg capacity, 2 m/second speed, average	↓	720,000.00
142 011-8700	Elevator passenger, 20 storey geared electric 2200 kg capacity, 2 m/second speed, average	EA	740,000.00
142 011-9060	Elevator passenger, 18 storey gearless electric 1800 kg capacity, 3.00 m/second speed, average		640,000.00
142 011-9220	Elevator passenger, 16 storey gearless electric 2200 kg capacity, 4.00 m/second speed, average		600,000.00
142 011-9560	Elevator passenger, 20 storey gearless electric 1800 kg capacity, 4.00 m/second speed, average		790,000.00
142 011-9600	Elevator passenger, 20 storey gearless electric 2000 kg capacity, 3.50 m/second speed, average		770,000.00
142 011-9700	Elevator passenger, 20 storey gearless electric 2200 kg capacity, 3.00 m/second speed, average		750,000.00
142 011-9780	Elevator passenger, 20 storey gearless electric 2200 kg capacity, 4.00 m/second speed, average	↓	780,000.00

## 143 MOVING STAIRS & WALKS

### 143 100 ESCALATORS

#### 143 101 ESCALATORS:

143 101-0010	Escalators single unit, up or down, rise 3.00 m, 813 mm wide, stainless steel balustrade	EA	240,000.00
143 101-0100	Escalators single unit, up or down, rise 4.50 m, 813 mm wide, stainless steel balustrade		280,000.00
143 101-0200	Escalators single unit, up or down, rise 6.00 m, 813 mm wide, stainless steel balustrade		350,000.00
143 101-0300	Escalators single unit, up or down, rise 4.50 m, 813 mm wide, enameled steel balustrade		280,000.00
143 101-1000	Escalator, single unit, up or down, rise 3.50 m, 1.2 m wide, enameled steel balustrade		290,000.00
143 101-1100	Escalator, single unit, up or down, rise 4.60 m, 1.2 m wide, stainless steel balustrade		250,000.00
143 101-1200	Escalator, single unit, up or down, rise 6.00 m, 1.2 m wide, enameled steel balustrade	↓	350,000.00
143 101-1300	Escalator, single unit, up or down, rise 4.50 m, 1.2 m wide, glass balustrade	EA	280,000.00

### 143 200 MOVING WALKS



## DIVISION 14: CONVEYING SYSTEMS

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
<b>143 201</b>	<b>MOVING RAMPS AND WALKS:</b>		
143 201-0010	Moving walk, 686 mm tread width, 50 m long.	EA	480,000.00
143 201-0140	Moving walk, 686 mm tread width, 150 m long.		680,000.00
143 201-0400	Moving walk, 1220 mm tread width walk, 100 m long		640,000.00
143 201-0600	Moving walk,ramp, 12 degree incline, 910 mm tread width, 12 meter long		280,000.00
143 201-0900	Moving walk,ramp, 12 degree incline,1220 mm tread width, 6 meter long		290,000.00

## 145 MATERIAL HANDLING SYSTEMS

### 145 010 MATERIAL HANDLING SYSTEMS

### 145 500 CONVEYORS

#### 145 501 MATERIAL HANDLING:

145 501-0100	Conveyors, <b>Gravity</b> type, 50 mm rollers, 76 mm O.C., 3 m sections with 2 supports, 270 kg capacity, 600 mm wide	EA	1,133.00
145 501-0150	Conveyors, <b>Gravity</b> type, 50 mm rollers, 76 mm O.C., 3 m sections with 2 supports, 600 kg capacity, 600 mm wide		1,320.00
145 501-0400	Conveyors, <b>Center drive &amp; takeup</b> , horizontal belt, 0.3 m/s, 400 mm belt, 8 m long		9,030.00
145 501-0450	Conveyors, <b>Center drive &amp; takeup</b> , horizontal belt, 0.3 m/s, 600 mm belt, 13 m long		9,870.00
145 501-0620	Conveyor, <b>Inclined belt</b> , with horizontal loader and end idler assembly, 3 m rise, 8 m long, 460 mm wide belt.		21,315.00
145 501-0700	Conveyor, <b>Inclined belt</b> , with horizontal loader and end idler assembly, 3 m rise, 8 m long, 600 mm wide belt.		23,940.00
145 501-1210	Conveyor, <b>Overhead,automatic powered</b> chain type, 186 kg/m capacity		577.50

### 145 600 CHUTES

#### 145 601 CHUTES:

145 601-0050	Chutes for linen, floor height 3.6 m,aluminized steel, 16 ga, with sprinkler,size 450 mm diameter complete with chute door	LM	3,803.22
145 601-0060	Chutes for refuse, floor height 3.6 m,aluminized steel, 16 ga, with sprinkler,size 450 mm diameter complete with chute door		3,457.48
145 601-0100	Chutes for linen, floor height 3.6 m, stainless steel, with sprinkler, size 450 mm diameter complete with door		6,220.04
145 601-0110	Chutes for chutes, floor height 3.6 m, stainless steel, with sprinkler, size 450 mm diameter complete with door		5,654.58
145 601-0150	Chutes for refuse,floor height 3.6 m,galvanized steel, with sprinkler, size 450 mm diameter complete with door		2,054.51
145 601-0200	Chutes for linen, floor height 3.6 m, stainless steel with sprinkler,size 600 mm diameter complete with chute door		7,515.03
145 601-0250	Chutes for refuse, floor height 3.6 m, stainless steel with sprinkler,size 600 mm diameter complete with chute door		6,831.85
145 601-0300	Chutes for linen or refuse,floor height 3.6 m, stainless steel with sprinkler,size 900 mm diameter complete with chute door		10,105.01
145 601-1200	Chutes,linen bottom collector,aluminized steel	EA	1,945.72
145 601-1300	Chutes,linen bottom collector,stainless steel		4,623.15
145 601-1500	Chutes,refuse bottom hopper,aluminized steel upto 900mm diameter (36")		2,100.00

## 146 HOISTS & CRANES

### 146 010 HOISTS & CRANES

### 146 011 MATERIAL HANDLING

**DIVISION 14: CONVEYING SYSTEMS**

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
146 011-2100	Overhead crane, 3 ton x 15 M span single girder, height of lift - 6 meters, standard industrial indoor duty with pendant control	EA	98,000.00
146 011-2120	Overhead crane, 5 ton x 15 M span single girder, height of lift - 6 meters., standard industrial indoor duty with pendant control	EA	126,000.00
146 011-2140	Overhead crane, 7.5 ton x 15 M span single girder, height of lift - 6 meters, standard industrial indoor duty with pendant control	EA	144,000.00
<b>146 050</b>	<b>RAILS</b>		
<b>146 054</b>	<b>CRANE RAIL</b>		
146 054-0100	Overhead crane, box beam bridge without equipment.	KG	8.00
146 054-0200	Overhead crane running tracks only, 0 .05 Kg/ mm	..	5.00



A decorative geometric pattern, resembling a complex lattice or star design, is located in the top right corner of the page. It is rendered in a light gray color against a darker gray background.

# Division 15

## Mechanical





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# مجموعة بيت التبريد

قطع غيار التبريد والتكييف

## Refrigeration House Group

AIR CONDITIONING & REFRIGERATION SPARE PARTS



من 11:00 إلى 19:00  
الجمعة 11:00 إلى 18:00  
1155 0777  
1155 0777



## DIVISION 15 : MECHANICAL

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
<b>151</b>	<b>PIPES &amp; FITTINGS :</b>		
<b>151 100</b>	<b>MISCELLANEOUS FITTINGS :</b>		
<b>151 105</b>	<b>BACKFLOW PREVENTER :</b>		
151 105-1010	Backflow preventer, " Brass/Bronze ", size (3/4").	EA	215.00
151 105-1020	Backflow preventer, " Brass/Bronze ", size ( 1" ).		270.00
151 105-1030	Backflow preventer, " Brass/Bronze ", size ( 2" ).		500.00
151 105-1040	Backflow preventer, " Steel ", flanged type, size ( 3" ).		1,750.00
151 105-1050	Backflow preventer, " Steel ", flanged type, size ( 4" ).		2,450.00
151 105-1060	Backflow preventer, " Steel ", flanged type, size ( 6" ).	↓	3,850.00
<b>151 165</b>	<b>SHOCK ABSORBERS :</b>		
151 165-1010	Shock absorbers copper, male, 1/2" size.	EA	185.00
151 165-1020	Shock absorbers copper, male, 3/4" size.		235.00
151 165-1030	Shock absorbers copper, male, 1" size.		315.00
151 165-1040	Shock absorbers copper, male, 1 1/2" size.	↓	395.00
<b>151 185</b>	<b>VACUUM BREAKERS:</b>		
151 185-1010	Vacuum breaker, anti-siphon, brass, 1/2" size.	EA	190.00
151 185-1020	Vacuum breaker, anti-siphon, brass, 3/4" size.		270.00
151 185-1030	Vacuum breaker, anti-siphon, brass, 1" size.	↓	675.00
<b>151 200</b>	<b>PIPES WITH FITTINGS :</b>		
<b>151 210</b>	<b>STAINLESS STEEL PIPE ( Sch.- 40 ) :</b>		
151 210-1010	Pipe, stainless steel, threaded type, 20 mm diameter (1/2").	LM	45.00
151 210-1020	Pipe, stainless steel, threaded type, 25 mm diameter (3/4").		55.00
151 210-1030	Pipe, stainless steel, threaded type, 32 mm diameter ( 1" ).		70.00
151 210-1040	Pipe, stainless steel, threaded type, 65 mm diameter ( 2" ).	↓	90.00
<b>151 220</b>	<b>GALVANIZED STEEL PIPE ( Sch. 40 ) ;</b>		
151 220-1010	Threaded type with fittings, size 1/2" mm diameter.		10.00
151 220-1020	Threaded type with fittings, size 3/4" mm diameter.	LM	15.00
151 220-1030	threaded type with fittings, size 1" mm diameter.		20.00
151 220-1040	Threaded type with fittings, size 1 1/2" mm diameter.		25.00
151 220-1050	Threaded type with fittings, size 2" mm diameter.		35.00
151 220-1060	threaded type with fittings, size 3" mm diameter.		50.00
151 220-1070	Flanged type with fittings, size 4" mm diameter.		70.00
151 220-1080	Flanged type with fittings, size 5" mm diameter.		90.00
151 220-1090	Flanged type with fittings, size 6" mm diameter.		120.00
151 220-1100	Flanged type with fittings, size 8" mm diameter.	↓	170.00
<b>151 230</b>	<b>DUCTILE IRON PIPE ;</b>		
151 230-1010	Threaded type with fittings, size 1 1/2" mm diameter.	LM	45.00
151 230-1020	Threaded type with fittings, size 2" mm diameter.		75.00
151 230-1030	Flanged type with fittings, size 3" mm diameter.		115.00
151 230-1040	Flanged type with fittings, size 4" mm diameter.		155.00
151 230-1050	Flanged type with fittings, size 6" mm diameter.		245.00
151 230-1060	Flanged type with fittings, size 8" mm diameter.	↓	365.00
<b>151 240</b>	<b>BLACK STEEL PIPE ( SCH.- 40 ) ;</b>		



## DIVISION 15 : MECHANICAL

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
151 240-1010	Threaded type with fittings, size 20 mm diameter ( 1/2" )		8.00
151 240-1020	Threaded type with fittings, size 25 mm diameter ( 3/4" )	LM	12.00
151 240-1030	Threaded type with fittings, size 32 mm diameter ( 1" )		17.00
151 240-1040	Threaded type with fittings, size 50 mm diameter ( 1 1/2" )		21.00
151 240-1050	Threaded type with fittings, size 65 mm diameter ( 2" )		30.00
151 240-1060	Flanged type with fittings, size 90 mm diameter ( 3" )		43.00
151 240-1070	Flanged type with fittings, size 100 mm diameter ( 4" )		60.00
151 240-1080	Flanged type with fittings, size 125 mm diameter ( 5" )		78.00
151 240-1090	Flanged type with fittings, size 150 mm diameter ( 6" )		100.00
151 240-1100	Flanged type with fittings, size 200 mm diameter ( 8" )	↓	150.00
<b>151 300 CAST IRON PIPE :</b>			
151 300-1010	Pipes with fittings, size 65 mm diameter ( 2" )	LM	65.00
151 300-1020	Pipes with fittings, size 90 mm diameter ( 3" )		90.00
151 300-1030	Pipes with fittings, size 100 mm diameter ( 4" )		125.00
151 300-1040	Pipes with fittings, size 125 mm diameter ( 5" )		140.00
151 300-1050	Pipes with fittings, size 150 mm diameter ( 6" )	↓	170.00
<b>151 400 COPPER PIPE :</b>			
151-400-1010	Type K tubing, size 5/8" .	LM	40.00
151-400-1020	Type K tubing, size 7/8" .		55.00
151-400-1030	Type K tubing, size 1 1/8" .		80.00
151-400-1040	Type L tubing, size 5/8" .		38.00
151-400-1050	Type L tubing, size 7/8" .		50.00
151-400-1060	Type L tubing, size 1 1/8" .		75.00
151-400-1070	Type L tubing, size 1 5/8" .		170.00
151-400-1080	Type L tubing, size 2 1/8" .	↓	235.00
<b>151 500 THERMO PIPE ( AQUATHERM ) ;</b>			
151 500-1010	Size 20 mm dia. ( 1/2" ) .	LM	23.00
151 500-1020	Size 25 mm dia. ( 3/4" ) .		27.00
151 500-1030	Size 32 mm dia. ( 1" ) .		32.00
151 500-1040	Size 40 mm dia. ( 1 1/4" ) .		35.00
151 500-1050	Size 50 mm dia. ( 1 1/2" ) .		42.00
151 500-1060	Size 65 mm dia. ( 2" ) .		48.00
151 500-1070	Size 75 mm dia. ( 2 1/2" ) .		55.00
151 500-1080	Size 90 mm dia. ( 3" ) .		63.00
151 500-1090	Size 110 mm dia. ( 3 1/2" ) .		70.00
151 500-1100	Size 125 mm dia. ( 4" ) .	↓	82.00
<b>151 550 uPVC , Sch.- 40/Class-5 :</b>			
151 550-1010	Size 20 mm diameter ( 1/2" )	LM	12.00
151 550-1020	Size 25 mm diameter ( 3/4" )		15.00
151 550-1030	Size 32 mm diameter ( 1" )		18.00
151 550-1040	Size 40 mm diameter ( 1 1/4" )		21.00
151 550-1050	Size 50 mm diameter ( 1 1/2" )		25.00
151 550-1060	Size 65 mm diameter ( 2" )	↓	30.00
151 550-1070	Size 75 mm diameter ( 2 1/2" )	LM	35.00
151 550-1080	Size 90 mm diameter ( 3" )		43.00



## DIVISION 15 : MECHANICAL

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
151 550-1090	Size 110 mm diameter ( 4" )		48.00
151 550-1100	Size 160 mm diameter ( 6" )		55.00
151 550-1110	Size 200 mm diameter ( 8" )	▼	63.00
<b>151 551 uPVC , Class-4 :</b>			
151 551-1010	Size 20 mm diameter ( 1/2" )	LM	9.00
151 551-1020	Size 25 mm diameter ( 3/4" )		11.00
151 551-1030	Size 32 mm diameter ( 1" )		14.00
151 551-1040	Size 40 mm diameter ( 1 1/4" )		17.00
151 551-1050	Size 50 mm diameter ( 1 1/2" )		20.00
151 551-1060	Size 65 mm diameter ( 2" )		23.00
151 551-1070	Size 75 mm diameter ( 2 1/2" )		27.00
151 551-1080	Size 90 mm diameter ( 3" )		33.00
151 551-1090	Size 110 mm diameter ( 4" )		40.00
151 551-1100	Size 160 mm diameter ( 6" )		45.00
151 551-1110	Size 200 mm diameter ( 8" )	▼	52.00
<b>151 800 GROOVED PIPES COUPLING ( STEEL ) :</b>			
151 800-1010	Size ( 2" ).	LM	8.00
151 800-1020	Size ( 2 1/2" ).		10.00
151 800-1030	Size ( 3" ).		13.00
151 800-1040	Size ( 4" ).		16.00
151 800-1050	Size ( 6" ).	▼	20.00
<b>151 900 DRAINAGE FITTINGS AND ACESSORIES :</b>			
<b>151 910 FLOOR DRAINS :</b>			
<i>( uPVC ' APLACO' , With St. Cover )</i>			
151 910-1010	Round or square , size 125 mm, 75X50X50 mm pipes connections.	EA	190.00
<b>151 920 FLOOR DRAINS, " ZURN " :</b>			
<i>( Cast Iron Body With round/square bronze strainer, model : ZB-415/6B )</i>			
151 920-1010	Size 50 mm / 2" .	EA	300.00
151 920-1020	Size 80 mm / 3" .		310.00
151 920-1030	Size 110 mm / 4" .		315.00
151 920-1040	Size 160 mm / 6" .	▼	415.00
<b>151 921 FLOOR DRAINS, " ZURN " :</b>			
<i>( Cast Iron Body With square st. steel strainer, model : ZS-415/6S ),</i>			
151 921-1010	Size 80 mm / 3" .	EA	425.00
151 921-1020	Size 110 mm / 4" .	EA	425.00
<b>151 922 FLOOR DRAINS, " ZURN " :</b>			
<i>( Cast Iron Body With round C.I. Top , model : Z-415/9B ),</i>			
151 922-1010	Size 50 mm / 2" .	EA	575.00
151 922-1020	Size 80 mm / 3" .		580.00
151 922-1030	Size 110 mm / 4" .		590.00

## DIVISION 15 : MECHANICAL

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
151 922-1040	Size 160 mm / 6" .	↓	675.00
<b>151 930</b>	<b>FLOOR CLEANOUTS ( FCO ) :</b>		
	<i>( Cast Iron Body with round bronze Top, model : ZB-1400/NL ) ,</i>		
151 930-1010	Size 50 mm / 2" .	EA	270.00
151 930-1020	Size 80 mm / 3" .	↓	310.00
151 930-1030	Size 110 mm / 4" .	↓	350.00
151 930-1040	Size 160 mm / 6" .	↓	825.00
<b>151 935</b>	<b>PIPES CLEANOUTS ( PCO ) :</b>		
	<i>( uPVC type , with plug ) ,</i>		
151 935-1010	Size 50 mm / 2" dia.	EA	30.00
151 935-1020	Size 80 mm / 3" dia.	↓	35.00
151 935-1030	Size 110 mm / 4" dia.	↓	40.00
151 935-1040	Size 160 mm / 6" dia.	↓	55.00
<b>151 940</b>	<b>OUTDOOR SURFACE CLEANOUTS ( SCO ) :</b>		
	<i>( Cast Iron With C.I. Round Top, model : Z-1400/NL)</i>		
151 940-1010	Size 160 mm / 6" .	EA	670.00
151 940-1020	Size 200 mm / 8" .	EA	685.00
<b>151 945</b>	<b>TRAPS:</b>		
151 945-1010	C.I. Service weight, long P-trap, 50 mm pipe size	EA	38.00
151 945-1020	C.I. Service weight, long P-trap, 75 mm pipe size	↓	50.00
151 945-1030	C.I. Service weight, long P-trap, 100 mm pipe size	↓	90.00
<b>151 950</b>	<b>V A L V E S :</b>		
<b>151 951</b>	<b>GAS STOP VALVES ( BRONZE ) :</b>		
151 951-1010	Size 1/2" dia.	EA	50.00
151 951-1020	Size 3/4" dia.	↓	67.00
151 951-1030	Size 1" dia.	↓	85.00
151 951-1040	Size 1 1/2" dia.	↓	127.00
151 951-1050	Size 2" dia.	↓	183.00
151 951-1060	Size 3" dia.	↓	318.00
<b>151 952</b>	<b>BALL VALVES THREADED TYPE ( BRONZE ) :</b>		
151 952-1010	Size 1/2" dia.	EA	42.00
151 952-1020	Size 3/4" dia.	↓	56.00
151 952-1030	Size 1" dia.	↓	73.00
151 952-1040	Size 1 1/2" dia.	↓	102.00
151 952-1050	Size 2" dia.	↓	167.00
151 952-1060	Size 3" dia.	↓	258.00
<b>151 953</b>	<b>GATE VALVES, THREADED TYPE ( BRONZE, CLASS 125 ) :</b>		
151 953-1010	Non rising stem, 1/2" size.	EA	63.00
151 953-1020	Non rising stem, 3/4" size.	↓	70.00
151 953-1030	Non rising stem, 1" size.	↓	92.00
151 953-1040	Non rising stem, 1 1/2" size.	↓	167.00



## DIVISION 15 : MECHANICAL

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
151 953-1050	Non rising stem, 2" size.		212.00
151 953-1060	Non rising stem, 3" size.		705.00
<b>151 954</b>	<b>GLOBE VALVES, THREADED TYPE ( BRONZE, CLASS 125 ) :</b>		
151 954-1010	Class 150, rising stem, 1/2" size.	EA	72.00
151 954-1020	Class 150, rising stem, 3/4" size.		85.00
151 954-1030	Class 150, rising stem, 1" size.		103.00
151 954-1040	Class 150, rising stem, 1 1/2" size.		176.00
151 954-1050	Class 150, rising stem, 2" size.		237.00
<b>151 955</b>	<b>ANGLE VALVES, INDUSTRIAL THREADED TYPE ( BRONZE ) :</b>		
151 955-1010	Rising stem, 1034 kPa, 1" size.	EA	73.00
151 955-1020	Rising stem, 1034 kPa, 1 1/2" size.		108.00
151 955-1030	Rising stem, 1034 kPa, 2" size.		137.00
<b>151 956</b>	<b>GATE VALVES, SOLDERED TYPE ( BRONZE, CLASS 125 ) :</b>		
151 956-1010	Non rising stem, 1/2" size.	EA	75.00
151 956-1020	Non rising stem, 3/4" size.		87.00
151 956-1030	Non rising stem, 1" size.		98.00
151 956-1040	Non rising stem, 1 1/2" size.		215.00
151 956-1050	Non rising stem, 2" size.		410.00
151 956-1060	Non rising stem, 3" size.		748.00
151 956-1040	Rising stem, class 150, 1" size.		125.00
151 956-1050	Rising stem, class 150, 1 1/2" size.		290.00
151 956-1060	Rising stem, class 150, 2" size.		575.00
151 956-1060	Rising stem, class 150, 3" size.		890.00
<b>151 957</b>	<b>GATE VALVES, FLANGED TYPE ( BRONZE, CLASS 125 ) :</b>		
151 957-1010	Non rising stem, 1" size.	EA	140.00
151 957-1020	Non rising stem, 1 1/2" size.		265.00
151 957-1030	Non rising stem, 2" size.		515.00
151 957-1040	Non rising stem, 3" size.		825.00
<b>151 958</b>	<b>CHECK VALVES, SWING THREADED TYPE ( BRONZE ) :</b>		
151 958-1010	Size 1/2" dia.	EA	63.00
151 958-1020	Size 3/4" dia.		70.00
151 958-1030	Size 1" dia.		92.00
151 958-1040	Size 1 1/2" dia.		167.00
151 958-1050	Size 2" dia.		212.00
151 958-1060	Size 3" dia.		705.00
<b>151 959</b>	<b>CHECK VALVES, SWING FLANGED TYPE ( BRONZE ) :</b>		
151 959-1010	Size 1" dia.	EA	140.00
151 959-1020	Size 1 1/2" dia.		265.00
151 959-1030	Size 2" dia.		515.00
151 959-1040	Size 3" dia.		825.00
<b>151 960</b>	<b>GATE VALVES, BUTTERFLY WAFER TYPE ( C.I. ) :</b>		
151 960-1010	Flanged type, 2" size.	EA	235.00
151 960-1020	Flanged type, 3" size.		418.00
151 960-1030	Flanged type, 4" size.		440.00



## DIVISION 15 : MECHANICAL

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
151 960-1040	Flanged type, 6" size.	↓	478.00
<b>151 961</b>	<b>GATE VALVES, BUTTERFLY, WAFER TYPE W/ CONTROL ( C.I.) :</b>		
151 961-1010	Flanged type, 2" size.	EA	655.00
151 961-1020	Flanged type, 3" size.	↓	838.00
151 961-1030	Flanged type, 4" size.	↓	1,020.00
151 961-1040	Flanged type, 6" size.	↓	1,058.00
<b>151 962</b>	<b>GATE VALVES, FLANGED TYPE ( CAST IRON "C.I." ) :</b>		
151 962-1010	Non rising stem, high pressure, 3" size.	EA	928.00
151 962-1020	Non rising stem, high pressure, 4" size.	↓	1,407.00
151 962-1030	Non rising stem, high pressure, 6" size.	↓	2,123.00
<b>151 965</b>	<b>CHECK VALVES, SWING FLANGED TYPE ( C.I. ) :</b>		
151 965-1010	Size 2" dia.	EA	395.00
151 965-1020	Size 3" dia.	↓	928.00
151 965-1030	Size 4" dia.	↓	1,407.00
151 965-1040	Size 6" dia.	↓	2,123.00
<b>151 966</b>	<b>CHECK VALVES, SPRING THREADED TYPE ( BRONZE ) :</b>		
151 966-1010	Size 1/2" dia.	EA	47.00
151 966-1020	Size 3/4" dia.	↓	56.00
151 966-1030	Size 1" dia.	↓	77.00
151 966-1040	Size 1 1/2" dia.	↓	108.00
151 966-1050	Size 2" dia.	↓	155.00
<b>151 967</b>	<b>AUTOMATIC PRESSURE RELIEF VALVE ( BRONZE ) :</b>		
151 967-1010	Size 1/2" dia.	EA	173.00
151 967-1020	Size 3/4" dia.	↓	208.00
151 967-1030	Size 1" dia.	↓	267.00
151 967-1040	Size 1 1/2" dia.	↓	376.00
151 967-1050	Size 2" dia.	↓	847.00
<b>151 968</b>	<b>PRESSURE REDUCING VALVE, (BRONZE), " ZURN - Wilkins " MODEL#975XL Series :</b>		
151 968-1010	Size 3/4" dia.	EA	615.00
151 968-1020	Size 1" dia.	↓	757.00
151 968-1030	Size 1 1/2" dia.	↓	1,418.00
151 968-1040	Size 2" dia.	↓	1,756.00
<b>151 975</b>	<b>GATE VALVES ( uPVC ) :</b>		
151 975-1010	Size 1/2" dia.	EA	25.00
151 975-1020	Size 3/4" dia.	↓	30.00
151 975-1030	Size 1" dia.	↓	37.00
151 975-1040	Size 1 1/2" dia.	↓	42.00
151 975-1050	Size 2" dia.	↓	67.00
151 975-1060	Size 3" dia.	↓	96.00
151 975-1070	Size 4" dia.	↓	148.00
<b>151 976</b>	<b>BALL VALVES ( uPVC ) :</b>		
151 976-1010	Size 1/2" dia.	EA	25.00
151 976-1020	Size 3/4" dia.	↓	30.00



## DIVISION 15 : MECHANICAL

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
151 976-1030	Size 1" dia.		35.00
151 976-1040	Size 1 1/2" dia.		40.00
151 976-1050	Size 2" dia.		62.00
151 976-1060	Size 3" dia.		88.00
151 976-1070	Size 4" dia.	↓	127.00

### 152 PLUMBING FIXTURES :

#### 152 100 FIXTURES :

#### 152 104 BATH TUBS :

152 104-1010	Steel, Ceramic coated, Size 1500 mm approx. Long.	EA	525.00
152 104-1020	Steel, Ceramic coated, Size 1800 mm approx. Long.		680.00
152 104-1030	Acrylic, Corner model, Size 1200 mm X 1200 mm approx.		925.00
152 104-1040	Acrylic, Size 1500 mm X 700 mm approx.		795.00
152 104-1050	Acrylic, Size 1800 mm X 800 mm approx.	↓	1,335.00

#### 152 105 SHOWER TRAYS :

152 105-1010	Recessed porcelain, Size 800 mm x 800 mm	EA	945.00
152 105-1020	Recessed porcelain, Size 900 mm x 900 mm		1,070.00
152 105-1030	Recessed Steel, Ceramic coated, Size 900 mm x 900 mm		575.00
152 105-1040	Recessed Steel, Ceramic coated, Size 110 mm x 110 mm		650.00
152 105-1050	Recessed Acrylic, Size 800 mm x 800 mm		505.00
152 105-1060	Recessed Acrylic, Size 900 mm x 900 mm	↓	650.00

#### 152 116 DRINKING WATER COOLER :

152 116-1010	Drinking fountain, wall mounted, recessed, st. steel, single tap.	EA	1,200.00
152 116-1020	Drinking fountain, floor mounted, stainless steel, single taps.		1,525.00
152 116-1030	Drinking fountain, floor mounted, stainless steel, double taps.		1,765.00
152 116-1040	Drinking fountain, floor mounted, stainless steel, triple taps.		2,345.00
152 116-1050	Drinking fountain, floor mounted, steel, w/ anti-rust coating, single tap.		1,065.00
152 116-1060	Drinking fountain, floor mounted, steel, w/ anti-rust coating, double taps.		1,200.00
152 116-1070	Drinking fountain, floor mounted, steel, w/ anti-rust coating, triple taps.		1,330.00
152 116-1080	Drinking fountain, floor mounted, fiberglass, single tap.		867.00
152 116-1090	Drinking fountain, floor mounted, fiberglass, double taps.		980.00
152 116-1060	Drinking fountain, floor mounted, fiberglass, triple taps.	↓	1,075.00

#### 152 128 INTERCEPTORS :

152 128-1010	Interceptors, grease, cast iron, 250 mL/s, 5 kg fat capacity	EA	3,450.00
152 128-1020	Interceptors, grease, cast iron, 1260 mL/s, 18 kg fat capacity		4,550.00
152 128-1030	Interceptors, grease, cast iron, 6300 mL/s, 55 kg fat capacity		5,890.00
152 128-1040	Interceptors, grease, cast iron, 6300 mL/s, 90 kg fat capacity	↓	7,870.00

#### 152 136 LAVATORIES :

152 136-1010	Vanity counter top lavatory, vitreous china, ( small size ), complete with mounting accessories and Chrome P-Trap, " Saudi Ceramic " Mfg.	EA	345.00
152 136-1020	Vanity counter top lavatory, vitreous china, (large size ), complete with mounting accessories and Chrome P-Trap, " Saudi Ceramic " Mfg.		425.00
152 136-1030	Vanity counter top lavatory, vitreous china, ( small size ), complete with mounting accessories and Chrome P-Trap, " American Standard " Mfg.		400.00
152 136-1040	Vanity counter top lavatory, vitreous china, (large size ), complete with mounting accessories and Chrome P-Trap, " American Standard " Mfg.		565.00



## DIVISION 15 : MECHANICAL

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
152 136-1050	Lavatory, vitreous china, medium size, complete with wall type bedstal, mounting accessories and Chrome P-Trap, " Saudi Ceramic " Mfg.		525.00
152 136-1060	Lavatory, vitreous china, large size, complete with wall type bedstal, mounting accessories and Chrome P-Trap, " Saudi Ceramic " Mfg.		630.00
152 136-1070	Lavatory, vitreous china, medium size, complete with floor type bedstal, mounting accessories and Chrome P-Trap, " Saudi Ceramic " Mfg.		575.00
152 136-1080	Lavatory, vitreous china, large size, complete with floor type bedstal, mounting accessories and Chrome P-Trap, " Saudi Ceramic " Mfg.		655.00
152 136-1090	Lavatory, vitreous china, medium size, complete with wall type bedstal, mounting accessories and Chrome P-Trap, " American Standard " Mfg.		580.00
152 136-1100	Lavatory, vitreous china, large size, complete with wall type bedstal, mounting accessories and Chrome P-Trap, " American Standard " Mfg.		675.00
152 136-1110	Lavatory, vitreous china, medium size, complete with floor type bedstal, mounting accessories and Chrome P-Trap, " American Standard " Mfg.		610.00
152 136-1120	Lavatory, vitreous china, large size, complete with floor type bedstal, mounting accessories and Chrome P-Trap, " American Standard " Mfg.		705.00
<b>152 140</b>	<b>CLEANING SINK :</b>		
152 140-1010	Single bowl, stainless steel, 550 mm x 550 mm, 250 mm deep approx.	EA	1,235.00
152 140-1020	Single bowl, vitreous china, 560 mm x 450 mm, 250 mm deep approx.	EA	1,765.00
<b>152 152</b>	<b>SINKS :</b>		
152 152-1010	Single bowl, stainless steel, 460 mm x 510 mm, 235 mm deep approx. without wings.	EA	525.00
152 152-1020	Single bowl, stainless steel, 500 mm x 900 mm, 200 mm deep approx. with single wing.		575.00
152 152-1030	Single bowl, stainless steel, 500 mm x 1200 mm, 200 mm deep approx. with double wings.		645.00
152 152-1040	Single bowl, stainless steel, 600 mm x 900 mm, 200 mm deep approx. with single wing.		625.00
152 152-1050	Single bowl, stainless steel, 600 mm x 1200 mm, 200 mm deep approx. with double wings.		670.00
<b>152 168</b>	<b>URINALS:</b>		
152 168-1010	Urinals, wall hung, vitreous china, " Saudi Ceramic ", with flush valve.	EA	420.00
152 168-1020	Urinals, wall hung, vitreous china, " American Standard ", with flush valve.	EA	675.00
<b>152 180</b>	<b>WATER CLOSETS:</b>		
152 180-1010	Water closet, wall hung, vitreous china, " Saudi Ceramic ", complete with flush tank and seat.	EA	745.00
152 180-1020	Water closet, wall hung, vitreous china, " American Standard ", complete with flush tank and seat.	EA	1,890.00
152 180-1030	Water closet, floor mounting, vitreous china, " Saudi Ceramic ", complete with flush tank and seat.		590.00
152 180-1040	Water closet, floor mounting, vitreous china, " American Standard ", complete with flush tank and seat.		1,685.00
152 180-1050	Water closet, wall hung, vitreous china, " Saudi Ceramic ", complete with flush valve and seat.		1,065.00
152 180-1060	Water closet, wall hung, vitreous china, " American Standard ", complete with flush valve and seat.		2,265.00
152 180-1070	Water closet, floor mounting, vitreous china, " Saudi Ceramic ", complete with flush valve and seat.		975.00
152 180-1080	Water closet, floor mounting, vitreous china, " American Standard ", complete with flush valve and seat.		1,995.00
152 180-1090	Water closet, wall hung, vitreous china, " Saudi Ceramic ", complete with concealed flush tank and seat.		845.00
152 180-1100	Water closet, wall hung, vitreous china, " American Standard ", complete with concealed flush tank and seat.		2,390.00
152 180-1110	Water closet, floor mounting, vitreous china, " Saudi Ceramic ", complete with concealed flush tank and seat.		710.00



## DIVISION 15 : MECHANICAL

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
152 180-1120	Water closet, floor mounting, vitreous china, " American Standard ", complete with concealed flush tank and seat.	↓	1,830.00
<b>152 200</b>	<b>FIXTURES FAUCETS &amp; FITTINGS :</b>		
152 200-1010	Bath tub / Shower tray mixer, faucet, head and diverter spout combination "GROHE", classic type .	EA	675.00
152 200-1020	Bath tub / Shower tray mixer, faucet , head and diverter spout combination "GROHE", high quality type .		1,030.00
152 200-1030	Bath tub / Shower tray mixer, faucet, head and diverter spout combination , luxury type .		1,485.00
152 200-1040	Lavatory mixer, faucets and angle valves, "GROHE", classic type .		545.00
152 200-1050	Lavatory mixer, faucets and angle valves, "GROHE", high quality type .		975.00
152 200-1060	Lavatory mixer, faucets and angle valves, luxury type .		1,270.00
152 200-1070	Sink mixer, faucets and angle valves, "GROHE", classic type .		505.00
152 200-1080	Sink mixer, faucets and angle valves, "GROHE", high quality type .		890.00
152 200-1090	Sink mixer, faucets and angle valves, luxury type .	↓	1,090.00
<b>152 400</b>	<b>PUMPS</b>		
<b>152 410</b>	<b>HOT WATER CIRCULATING PUMPS :</b>		
152 410-1010	Vertical pump, "GRUNDFOS", 15 gpm capacity, 25 meters head, 220/1/60hz.	EA	1,925.00
152 410-1020	Vertical pump, "GRUNDFOS", 30 gpm capacity, 35 meters head, 220/1/60hz.	EA	2,375.00
<b>152 415</b>	<b>PUMPS, CONDENSATE RETURN SYSTEM</b>		
152 415-1010	Pump, condensate, simplex, motor, float switch, controls, cast iron receiver	EA	
<b>152 430</b>	<b>PUMPS, GENERAL UTILITY</b>		
	<i>With motor, mounted on base</i>		
152 430-1010	Pump, general utility, multi-stage, horizontal split, for boiler feed applications two stage, 76 mm discharge x 100 mm suction, 75 HP	EA	28,500.00
152 430-1010	Pump, general utility, single stage, end suction, 38 mm discharge x 76 mm suction, 10 HP		4,950.00
152 430-1010	Pump, general utility, single stage, double suction, 76 mm discharge x 100 mm suction, 20 HP	↓	19,250.00
<b>152 450</b>	<b>PUMPS, PRESSURE BOOSTER SYSTEM</b>		
152 450-1010	Pressure booster pump system, with diaphragm tank, control, pressure switch, 2 HP, ( 2 No's.)	Set	19,350.00
152 450-1010	Pressure booster pump system, with diaphragm tank, control pressure switch 4 HP, ( 2 No's.)	Set	32,500.00
<b>152 460</b>	<b>SUMP PUMP :</b>		
152 460-1010	Sump pump, 1325 mL/s at 4.5 mm head	EA	3,750.00
<b>152 465</b>	<b>PUMPS, SEWAGE EJECTOR</b>		
152 465-1010	Pump, sewage ejector simplex system incl. tank, cover, 140 liter, polyethylene tank, 757 mL/s, 1/2 HP, 76 mm discharge (3")	EA	5,250.00
152 465-1010	Pump, sewage ejector, simplex system including tank, cover, 4.5 m head, 265 Liter, polyethylene tank, 975 mL/s, 3/4 HP, 90 mm discharge	EA	6,800.00
<b>152 480</b>	<b>PUMPS, SUBMERSIBLE</b>		
152 480-1010	Submersible, sump pump, automatic, cast iron, 32 mm discharge, 1/2 HP	EA	5,100.00
<b>153 110</b>	<b>WATER HEATERS:</b>		
	<i>For solar, see Division 155-471</i>		
153 110-1040	Residential, water heater, electric, glass lined tank, 20 gallon, single element	EA	1,475.00
153 110-1080	Residential, water heater, electric, glass lined tank, 40 gallon, double element		1,690.00
153 110-6070	Water heater, galvanized iron, polyurethane foam insulation, 240/127 voltage, 30 gal. capacity		790.00
153 110-6080	Water heater, galvanized iron, polyurethane foam insulation, 240/127 voltage, 50 gal. capacity		860.00



## DIVISION 15 : MECHANICAL

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
153 110-6090	Water heater, galvanized iron, polyurethane foam insulation, 240/127 voltage, 80 gal. capacity		1,355.00
153 110-6100	Water heater, galvanized iron, polyurethane foam insulation, 240/127 voltage, 100 gal. capacity		2,400.00
<b>153 150</b>	<b>WATER TREATMENT, POTABLE:</b>		
153 150-6100	Water treatment, potable, softener systems, automatic, hardness capacity between regenerations and flow, 150,000 grains 2.3 L/s cont., 3.2 L/s peak	EA	6,850.00
153 150-6400	Water treatment, potable, softener systems, automatic, hardness capacity between regenerations and flow, 900,000 grains 11.7 L/s cont., 17.0 L/s peak	EA	12,500.00
<b>153 160</b>	<b>WATER SUPPLY METERS</b>		
153 160-2100	Water meter, domestic/commercial, bronze, threaded, 25 mm diameter, to 3.2 L/s	EA	625.00
153 160-2340	Water meter, domestic/commercial, bronze, threaded/flanged, 38 mm diameter, to 6.31 L/s		835.00
153 160-2360	Water meter, domestic/commercial, bronze, threaded/flanged, 50 mm diameter, to 10.1 L/s		1,250.00
153 160-2650	Water meter, domestic/commercial, bronze, flanged, compound, 90 mm diameter, to 31.6 L/s		4,650.00
<b>154</b>	<b>FIRE PROTECTION</b>		
<b>154 100</b>	<b>FIRE SYSTEMS</b>		
<b>154 101</b>	<b>AUTOMATIC FIRE SUPPRESSION SYSTEMS</b>		
154 101-1000	Automatic fire suppression systems, dispersion nozzle, CO2, 76 mm x 127 mm	EA	380.00
154 101-1050	Automatic fire suppression systems, dispersion nozzle, CO2, 150 mm x 60 mm x 40 mm		9,500.00
154 101-1100	Automatic fire suppression systems, dispersion nozzle, FM200, 38 mm		4,750.00
154 101-1150	Fire extinguishing system ( CO2 system ) for data room ( 12 sqr.meters area ), high pressure, 23 kg cylinder , with mounting brackets .		23,500.00
154 101-1200	Fire extinguishing system ( FM 200 system ) for data room ( 12 sqr.meters area ), high pressure, with mounting brackets .		34,000.00
<b>154 115</b>	<b>FIRE EQUIPMENT CABINETS</b>		
154 115-3000	Fire cabinet, 20 ga. steel box, hose rack assy. 1 1/2" valve & 30 m rubber hose, 610 mm x 1016 mm, with steel frame and Aluminum door.	EA	2,700.00
154 115-3300	Fire cabinet, 20 ga. steel box, hose rack assy. 1 1/2" valve & 30 m rubber hose, 610 mm x 1016 mm, with steel frame and St. Steel door.	EA	2,600.00
<b>154 125</b>	<b>FIRE EXTINGUISHERS</b>		
154 125-2000	Fire extinguishers, ABC all purpose type 10 kg	EA	200.00
154 125-2300	Fire extinguishers, ABC all purpose type 50 kg, wheeled	EA	900.00
<b>154 135</b>	<b>FIRE HOSE AND EQUIPMENT</b>		
154 135-2640	Fire hose rack, swinging, for 38 mm diameter hose, enameled steel, 30 m lengths of hose	EA	1,475.00
154 135-3840	Fire connection, wall type, with caps, single, flush, polished brass .		1,500.00
154 135-7180	Fire, standpipe connections, wall, w/ plugs and chains, single, flush, brass 64 mm x 76 mm		1,500.00
154 135-7240	Fire, standpipe connections, wall, w/ plugs & chains, single, flush, polished chrome 64 mm x 76 mm		1,950.00
154 135-7330	Fire, standpipe connections, double flush, brass, 64 mm x 64 mm x 150 mm		2,675.00
154 135-7400	Fire, standpipe connections, double flush, polished chrome, 64 mm x 64 mm x 150 mm		2,845.00
<b>154 140</b>	<b>FIRE HYDRANTS :</b>		
154 140-0020	Fire Department Connection ( 'Y' - wall type ), 3" size, moderate climate, bronze body and caps , with bronze back plate .	EA	2,300.00



## DIVISION 15 : MECHANICAL

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
154 140-3100	Fire Department Connection ( 'Y' - wall type ), 3" size, moderate climate, bronze body and caps, but chrome plated.		3,550.00
154 140-5120	Fire Hydrant , Steel Body , size 4" X 2 1/2" X 4" , complete with valve, key and valve box .	↓	6,750.00
<b>154 145</b>	<b>FIRE PUMPS</b>		
154 145-0200	Fire pump with controller, and relief valve, diesel 250 GPM, 105 psi, 27 HP, 110 mm pump	EA	63,000.00
154 145-0210	Fire pump with controller, and relief valve, diesel 500 GPM, 120 psi, 40 HP, 125 mm pump		75,000.00
154 145-0700	Fire pump with controller, and relief valve, diesel 750 GPM, 130 psi, 55 HP, 125 mm pump		89,000.00
154 145-0800	Fire pump with controller, and relief valve, diesel 1000 GPM, 147 psi, 70 HP, 150 mm pump		130,000.00
154 145-3200	Fire pump with controller and relief valve, electric 32 L/s, 345 kPa, 27 HP, 1770 RPM, 100 mm pump		37,925.00
154 145-3210	Fire pump with controller, and relief valve, electric 250 GPM, 105 psi, 90 mm pump .		28,750.00
154 145-3400	Fire pump with controller, and relief valve, electric 500 GPM, 120 psi, 110 mm pump.		40,500.00
154 145-3410	Fire pump with controller, and relief valve, electric 750 GPM, 130 psi, 110 mm pump		57,500.00
154 145-3420	Fire pump with controller, and relief valve, electric 1000 GPM, 130 psi, 125 mm pump		71,500.00
154 145-5000	Jockey pump 25 mm with control, 120 psi, 5 GPM .		8,500.00
154 145-5010	Jockey pump 25 mm with control, 130 psi, 7.5 GPM .		12,500.00
154 145-5020	Jockey pump 32 mm with control, 130 psi, 10 GPM .	↓	14,750.00
<b>154 170</b>	<b>SPRINKLER SYSTEM COMPONENTS :</b>		
154 170-2700	Sprinkler heads, dry, pendant, 13 mm orifice, 20 mm size, brass.	EA	350.00
154 170-3600	Sprinkler heads, water, pendant or upright, 13 mm size, chrome finish		45.00
154 170-3610	Sprinkler heads, water, pendant or upright, 13 mm size, brass finish		38.00
154 170-4520	Sprinkler head, water, sidewall, brass finish, 13 mm orifice		45.00
154 170-4530	Sprinkler head, water, sidewall, chrome finish, 13 mm orifice		38.00
154 170-4820	Sprinkler head, water, recessed pendant, brass to 415 K, 13 mm NPT, 13 mm orifice	↓	55.00
<b>155</b>	<b>HEATING</b>		
<b>155 100</b>	<b>BOILERS</b>		
<b>155 110</b>	<b>BOILERS ELECTRIC</b>		
155 110-1160	Steam boiler, electric fired, including standard controls and trim 60 kW	EA	24,700.00
155 110-1280	Steam boiler, electric fired, including standard controls and trim 225 kW		83,350.00
155 110-2100	Boilers, hot water, electric fired, including standard controls & trim 60 kW		24,700.00
155 110-2320	Boilers, hot water, electric fired, including standard controls & trim 500 kW	↓	122,480.00
<b>155 115</b>	<b>BOILERS, GAS FIRED</b>		
155 115-2240	Steam boiler, gas fired, standard control, cast iron, with insulated jacket, gross output 220 kW	EA	71,500.00
155 115-2320	Steam boiler, gas fired, standard control, cast iron, with insulated jacket, gross output 550 kW		108,400.00
155 115-3140	Hot water boiler, gas fired, standard controls, cast iron, with insulated jacket, gross output 90 kW		54,345.00
155 115-3380	Hot water boiler, gas fired, standard controls, cast iron, w/ insulated jacket, gross output 500 kW		116,750.00
155 115-5500	Steam boiler, gas fired, standard controls, steel with insulated jacket, gross output 422 kW		91,665.00



## DIVISION 15 : MECHANICAL

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
155 115-6120	Hot water boiler, gas fired, standard controls, steel, with insulated jacket, gross output 65 kW		59,750.00
155 115-6240	Hot water boiler, gas fired, standard controls, steel, with insulated jacket, gross output 280 kW		68,275.00
<b>155 150</b>	<b>SWIMMING POOL HEATERS</b>		
155 150-0280	Pool heaters, gas fired, gross output, 145 kW	EA	18,750.00
155 150-0400	Pool heaters, gas fired, gross output, 465 kW		52,345.00
155 150-2100	Pool heaters, electric, 36 kW, 91 CUM pool		9,350.00
155 150-2200	Pool heater, electric, 45 kW		12,900.00
<b>155 400</b>	<b>WARM AIR SYSTEMS</b>		
<b>155 408</b>	<b>DUCT HEATERS</b>		
155 408-0100	Duct heater, electric, finned tabular insert 533 K, 200 mm wide x 150 mm high 4.0 kW	EA	1,170.00
155 408-0120	Duct heater, electric, finned tabular insert 533 K, 200 mm wide x 300 mm high 8.0 kW		1,350.00
155 408-0160	Duct heater, electric, finned tabular insert 533 K, 200 mm wide x 600 mm high 16.0 kW		2,235.00
155 408-0180	Duct heater, electric, finned tabular insert 533 K, 200 mm wide x 760 mm high 20.0 kW		3,290.00
155 408-0300	Duct heater, electric, finned tabular insert 533 K, 300 mm wide x 150 mm high 6.7 kW		790.00
155 408-0760	Duct heater, electric, finned tabular insert 533 K, 300 mm wide x 600 mm high 26.7 kW		3,800.00
<b>155 408</b>	<b>HEATING &amp; VENTILATING UNITS</b>		
155 440-0140	Heating and ventilating unit, classroom type including filter, heating/cooling coils, and standard control, 0,7 cum/s, 14 kW cooling	EA	13,600.00
<b>155 471</b>	<b>SOLAR ENERGY</b>		
155 471-0620	Solar heating, standard low temperature package, 3 collectors, circulator, fittings, 500 L tank	EA	38,000.00
<b>155 600</b>	<b>HEATING SYSTEM ACCESSORIES</b>		
<b>155 601</b>	<b>HEAT EXCHANGERS</b>		
155 601-0220	Heat exchangers, shell & tube type, 4 pass, 19 mm O.D. copper tubes, C.I. heads, C.I. tube sheet, steel shell, hot water 355 K, by steam at 69 kPa, 7.6 L/s	EA	16,835.00
<b>155 610</b>	<b>HEAT TRANSFER PACKAGES</b>		
155 610-1060	Heat transfer package, hot water, 350 K enter, 360 K leaving, 100 kPa steam one pump, 7.5 L/s	EA	48,850.00
<b>155 640</b>	<b>HUMIDIFIERS</b>		
155 640-0560	Humidifier, steam, room or duct, filter, regulators, auto, controls, 220 V, 5 kg/hr	EA	1,875.00
155 640-0570	Humidifier, steam, room or duct, filter, regulators, auto, controls, 220 V, 10 kg/hr		3,050.00
155 640-0580	Humidifier, steam, room or duct, filter, regulators, auto, controls, 220 V, 15 kg/hr		3,880.00
155 640-0620	Humidifier, steam, room or duct, filter, regulators, auto, controls, 220 V, 45 kg/hr		6,750.00
<b>155 651</b>	<b>PIPE INSULATION</b>		
155 651-7920	Pipe insulating with rubber tubing, flexible, 10 mm wall, for 20 mm pipe size	LM	14.00
155 651-7930	Pipe insulating with rubber tubing, flexible, 10 mm wall, for 25 mm pipe size		17.00
155 651-8150	Pipe insulating with rubber tubing, flexible, 13 mm wall, for 25 mm pipe size		20.00
155 651-8180	Pipe insulating with rubber tubing, flexible, 13 mm wall, for 50 mm pipe size		32.00
155 651-8380	Pipe insulating with rubber tubing, flexible, 19 mm wall, for 50 mm pipe size		36.00
<b>155 680</b>	<b>VENT CHIMNEY</b>		



## DIVISION 15 : MECHANICAL

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
155 680-0140	Chimney vent, gas or oil fuel, double wall, stainless steel, 150 mm diameter	LM	120.00
155 680-0180	Chimney vent, gas, double wall, galvanized steel, 200 mm diameter	LM	135.00
<b>156 HVAC PIPING SPECIALTIES</b>			
<b>156 200 HEAT / COOL PIPING MISCELLANEOUS</b>			
<b>156 201 AUTOMATIC AIR VENT</b>			
156 201-0220	Automatic air vent (AAV) copper body, stainless steel internals, float type, 20 mm NPT inlet, 1724 kPa (3/4")	EA	165.00
156 201-0340	Automatic air vent (AAV) C.I. body, stainless steel internals, float type, 38 mm NPT inlet, 1724 kPa	EA	785.00
<b>156 205 AIR CONTROL</b>			
156 205-0040	Air control with strainer 50 mm diameter (2")	EA	1,450.00
156 205-0120	Air control with strainer 100 mm diameter (4")	EA	3,765.00
<b>156 225 EXPANSION JOINTS <i>Bellows type, neoprene cover, flanged spool</i></b>			
156 225-0120	Expansion joint, bellow type, neoprene cover, flanged spool, 25 mm diameter	EA	93.00
156 225-0180	Expansion joint, bellow type, neoprene cover, flanged spool, 50 mm diameter	EA	160.00
<b>156 235 FLEXIBLE METAL HOSE</b>			
156 235-0180	Flexible metal hose connector, bronze braided, bronze ends, 25 mm diameter x 300 mm	EA	127.00
156 235-0220	Flexible metal hose connector, bronze braided, bronze ends, 50 mm diameter x 300 mm	EA	243.00
<b>156 240 HEATING CONTROL VALVES</b>			
156 240-0120	Heat control valve, radiator supply, 20 mm diameter	EA	448.00
156 240-0140	Heat control valve, radiator supply, 25 mm diameter	EA	477.00
<b>156 260 PRESSURE REGULATORS</b>			
156 260-3030	Pressure regulator, steam, high capacity, bronze body, stainless steel trim threaded, 20 mm diameter	EA	2,060.00
156 260-3040	Pressure regulator, steam, high capacity, bronze body, stainless steel trim threaded, 25 mm diameter		3,140.00
156 260-3100	Pressure regulator, steam, high capacity, bronze body, stainless steel trim threaded, 50 mm diameter		7,050.00
156 260-3540	Pressure regulator, steam, high capacity, flanged connection, iron body, 861 kPa W.S.P. 100 mm diameter	↓	12,600.00
<b>156 270 STEAM CONDENSATE METER</b>			
156 270-0100	Steam condensate meter, 227 kg/hr	EA	15,450.00
<b>156 272 STEAM TRAP</b>			
156 272-0200	Steam trap, cast iron body, threaded inverted bucket 25 mm pipe size (1")	EA	2,400.00
<b>156 600 STRAINERS</b>			
<b>156 608 STRAINERS, Y TYPE BRONZE</b>			
156 608-0140	Strainers, Y type bronze body screwed, 1034 kPa, 25 mm pipe size	EA	87.00
156 608-0180	Strainers, Y type bronze body screwed, 1034 kPa, 50 mm pipe size (2")		248.00
156 608-1020	Strainers, Y type bronze body flanged, 1034 kPa, 50 mm pipe size (2")		345.00
156 608-1030	Strainers, Y type bronze body flanged, 1034 kPa, 63 mm pipe size (2 1/2")		575.00
156 608-1040	Strainers, Y type bronze body flanged, 1034 kPa, 75 mm pipe size (3")		650.00
156 608-1050	Strainers, Y type bronze body flanged, 1034 kPa, 100 mm pipe size (4")		1,345.00
156 608-1060	Strainers, Y type bronze body flanged, 1034 kPa, 200 mm pipe size (8")	↓	3,720.00
<b>156 612 STRAINERS, Y TYPE IRON</b>			
156 612-0160	Strainers, Y type iron body screwed, 1724 kPa, 38 mm pipe size	EA	128.00



## DIVISION 15 : MECHANICAL

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
156 612-1020	Strainers, Y type iron body flanged, 862 kPa, 50 mm pipe size (2")	EA	395.00
156 612-1060	Strainers, Y type iron body flanged, 862 kPa, 100 mm pipe size (4")	EA	850.00
<b>157 AIR CONDITIONING / VENTILATING</b>			
<b>157 100 A. C. &amp; VENT. UNITS</b>			
<b>157 125 CENTRAL STATION AIR-HANDLING UNIT</b>			
157 125-1300	Central station AHU, chilled water, modular, capacity at 3.55 m/s face velocity 1.5 cum/s	EA	23,000.00
157 125-1500	Central station AHU, chilled water, modular, capacity at 3.55 m/s face velocity 3.8 cum/s		45,000.00
157 125-1700	Central station AHU, chilled water, modular, capacity at 3.55 m/s face velocity 9.44 cum/s		121,000.00
157 125-1900	Central station AHU, chilled water, modular, capacity at 3.55 m/s face velocity 15.8 cum/s	↓	203,000.00
<b>157 130 COMPUTER ROOM UNITS</b>			
157 130-1240	Computer room units, air cooled, includes remote condenser but not interconnecting tubing or refrigerant, 35 kW	EA	175,000.00
<b>157 150 FAN COIL AIR CONDITIONING</b>			
157 150-0100	FCU, cabinet mounted, with controls and filter, chilled water, 1.8 kW cooling	EA	3,350.00
157 150-0120	FCU, cabinet mounted, with controls and filter, chilled water, 3.5 kW cooling		4,400.00
157 150-0180	FCU, cabinet mounted, with controls and filter, chilled water, 10.5 kW cooling		8,500.00
157 150-0940	FCU, cabinet mounted, with controls and filter, direct expansion, 5.3 kW cooling	↓	5,300.00
<b>157 160 HEAT PUMPS</b>			
157 160-1080	Heat pump, air to air, split system, 26 kW cooling, 10 kW heat @ 255 K	EA	16,750.00
157 160-1120	Heat pump, air to air, split system, not including curbs, pads or ductwork 54 kW cooling, 19 kW heat @ 255 K	EA	43,000.00
154 160-2220	Heat pump, water source to air, single package, 17 kW cooling, 8 kW heat @ 297 K	EA	14,750.00
<b>157 170 PACKAGED TERMINAL AIR CONDITIONER</b>			
157 170-0240	Package terminal air conditioner cabinet, wall sleeve, 3.5 kW cooling 4 kW heat	EA	6,850.00
157 170-0260	Package terminal air conditioner cabinet, wall sleeve, 4.4 kW cooling 4 kW heat	EA	7,000.00
<b>157 180 ROOF TOP AIRCONDITIONERS</b>			
157 180-1145	Roof top AC with std. controls, curb, Single zone, 21 kW cooling	EA	16,700.00
157 180-1160	Roof top AC with std. controls, curb, Single zone, 35 kW cooling		26,000.00
157 180-1200	Roof top AC with std. controls, curb, Single zone, 70 kW cooling		50,000.00
157 180-1220	Roof top AC with std. controls, curb, Single zone, 105 kW cooling		111,500.00
157 180-2120	Roof top AC with std. controls, curb, Multi zone, 70 kW cooling		50,000.00
157 180-2200	Roof top AC with std. controls, curb, Multi zone, 140 kW cooling	↓	127,000.00
<b>157 185 SELF-CONTAINED SINGLE PACKAGE</b>			
157 185-0220	Self-contained AC package unit, Air cooled, including remote condenser 17.6 kW	EA	25,750.00
157 185-0240	Self-contained AC package unit, Air cooled, including remote condenser 35 kW (split)		32,800.00
157 185-0260	Self-contained AC package unit, Air cooled, including remote condenser 70 kW		83,000.00
157 185-0280	Self-contained AC package unit, Air cooled, including remote condenser 105 kW		115,000.00



## DIVISION 15 : MECHANICAL

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
157 185-0340	Self-contained AC package unit, Air cooled, including remote condenser 210 kW		198,000.00
157 185-1140	Self-contained AC package unit, Water cooled, including remote condenser 35 kW	↓	33,000.00
<b>157 190</b>	<b>WATER CHILLERS</b>		
157 190-0100	Centrifugal, liquid chiller, water cooled, package hermetic, 200 ton	EA	450,000.00
157 190-0200	Centrifugal, liquid chiller, water cooled, package hermetic, 400 ton		915,000.00
157 190-0490	Water chiller, reciprocating, packaged with air cooled condenser, 150 ton cooling		383,500.00
157 190-0500	Water chiller, reciprocating, packaged with air cooled condenser, 175 ton cooling		437,000.00
157 190-0520	Water chiller, reciprocating, packaged with air cooled condenser, 200 ton cooling		468,000.00
157 190-0600	Water chiller, reciprocating, packaged with air cooled condenser, 250 ton cooling		500,000.00
157 190-0640	Water chiller, reciprocating, packaged with air cooled condenser, 300 ton cooling		565,000.00
157 190-0660	Water chiller, reciprocating, packaged with air cooled condenser, 350 ton cooling		635,000.00
157 190-0700	Water chiller, reciprocating, packaged with air cooled condenser, 400 ton cooling		725,000.00
157 190-1200	Water chiller, reciprocating, water cooled, multi compressor, semi-hermitic tower not included 140 ton cooling		370,000.00
157 190-1580	Water chiller, reciprocating, water cooled, dual compressor, direct drive, semi-hermitic tower not included 150 ton cooling		383,500.00
157 190-3100	Packaged chiller, with remote air cooled condenser 100 ton	↓	285,000.00
157 190-3150	Packaged chiller, with remote air cooled condenser 140 ton	EA	385,000.00
<b>157 197</b>	<b>WINDOW UNIT AIR CONDITIONER</b>		
157 197-2000	Window air condition unit thru the wall, 1.5 ton	EA	1,350.00
157 197-2100	Window air condition unit thru the wall, 2 ton	↓	1,500.00
<b>157 200</b>	<b>SYSTEM COMPONENTS</b>		
<b>157 225</b>	<b>CONDENSERS</b>		
157 225-0800	Condenser, air cooled, belt drive, propeller fan, 48 ton	EA	86,800.00
157 225-0280	Condenser, air cooled, belt drive, propeller fan, 60 ton		107,500.00
157 225-0550	Condenser, air cooled, belt drive, propeller fan, 235 ton		397,000.00
157 225-0800	Condenser, air cooled, belt drive, propeller fan, 470 ton		763,000.00
157 225-1760	Condenser, air cooled, direct drive, propeller fan, 40 ton		69,000.00
157 225-1900	Condenser, air cooled, direct drive, propeller fan, 105 ton	↓	184,000.00
<b>157 240</b>	<b>COOLING TOWERS</b>		
157 240-0250	Cooling tower, package unit, galv. steel, draw thru, single flow, belt drive 125 ton	EA	95,398.00
157 240-1500	Cooling tower, package unit, galv. steel, induced air, double flow, gear drive, 150 ton		114,477.00
157 240-2000	Cooling tower, package unit, galv. steel, induced air, double flow, gear drive, 300 ton		228,955.00
157 240-6120	Cooling tower, package unit, stainless steel, draw thru, single flow, belt drive, 110 ton	↓	83,950.00
<b>157 250</b>	<b>DUCTWORK</b>		
157 250-0110	Duct aluminum alloy	KG	38.00
157 250-0500	Duct galvanized steel	↓	27.00
157 250-1000	Duct stainless steel type 304	↓	52.00
157 250-1560	Round duct, flexible, coated fiberglass 150 mm diameter (6")	LM	28.00



## DIVISION 15 : MECHANICAL

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
157 250-1640	Round duct, flexible, coated fiberglass 250 mm diameter (10")		41.00
157 250-1660	Round duct, flexible, coated fiberglass 300 mm diameter (12")		47.00
<b>157 290</b>	<b>FANS</b>		
157 290-0050	Fan, axial flow, compact, low sound, 64 mm S.P., (3500 CFM), 1.8 cum/s, 5 HP	EA	3,250.00
157 290-0060	Fan, axial flow, compact, low sound, 64 mm S.P., (3500 CFM), 1.8 cum/s, 3 HP, with vibration isolators and motor cover.		3,375.00
157 290-0100	Fan, axial flow, compact, low sound, 64 mm S.P., (10500 CFM), 5 cum/s, 7.5 HP		9,760.00
157 290-0110	Fan, axial flow, compact, low sound, 64 mm S.P., (10500 CFM), 5 cum/s, 10 HP, with vibration isolators and motor cover.		9,175.00
157 290-0120	Fan, axial flow, compact, low sound, 64 mm S.P., (15600 CFM), 7.3 cum/s, 10 HP		9,550.00
157 290-0130	Fan, axial flow, compact, low sound, 64 mm S.P., (15600 CFM), 7.3 cum/s, 25 HP		9,680.00
157 290-0260	Fan, in-line centrifugal, supply/exhaust booster, aluminum wheel/hub, disconnect switch, 6 mm S.P., (1380 CFM), 0.651 cum/s, 300 mm dia. connection		2,690.00
157 290-0300	Fan, in-line centrifugal, supply/exhaust booster, aluminum wheel/hub, disconnect switch, 6 mm S.P., (2560 CFM), 1.208 cum/s, 457 mm dia. connection		3,575.00
157 290-0320	Fan, in-line centrifugal, supply/exhaust booster, aluminum wheel/hub, disconnect switch, 6 mm S.P., (3480 CFM), 1.643 cum/s, 500 mm dia. connection		3,550.00
157 290-2580	Ceiling fan, right angle, extra quiet, 3 mm S.P. (885 CFM), 0.418 cum/s	EA	1,770.00
157 290-2620	Ceiling fan, right angle, extra quiet, 3 mm S.P. (2960 CFM), 1.397 cum/s		3,575.00
157 290-3020	Ceiling fan, paddle blade air circulator, 3 speed switch, 1067 mm, (5000 CFM), 2.36 cum/s high, (3000 CFM), 1.416 cum/s low		550.00
157 290-4640	Ventilator, roof type, corrosive fume resistant, plastic, centrifugal, V belt drive, motor, 6 mm S.P., (895 CFM - 1/3 HP), 0.422 cum/s, 248 W		1,595.00
157 290-4680	Ventilator, roof type, corrosive fume resistant, plastic, centrifugal, V belt drive, motor, 6 mm S.P., (2240 CFM - 1 HP), 1.057 cum/s, 746 W		2,300.00
157 290-4720	Ventilator, roof type, corrosive fume resistant, plastic, centrifugal, V belt drive, motor, 6 mm S.P., (11760 CFM - 5 HP), 5.549 cum/s, 3.75 kW		5,225.00
157 290-6140	Fan, propeller exhaust, wall shutter, 6 mm S.P., direct drive two speed, (1000 CFM, 1/8 HP), 0.472 cum/s, 93 W		1,435.00
157 290-6670	Fan, residential, bath exhaust, grille, back draft damper (110 CFM), 0.052 cum/s		1,690.00
157 290-7160	Roof exhauster, centrifugal, aluminum housing, 300 mm galvanized curb, bird screen, back draft damper, 6 mm S.P. direct drive (1450 CFM), 0.684 cum/s, 0.109 sqm damper		1,565.00
157 290-7180	Roof exhauster, centrifugal, aluminum housing, 300 mm galvanized curb, bird screen, back draft damper, 6 mm S.P. direct drive (2050 CFM), 0.968 cum/s, 0.165 sqm damper		1,960.00
157 290-7260	Roof exhauster, centrifugal, aluminum housing, 305 mm galvanized curb, bird screen, back draft damper, 6 mm S.P. V-belt drive (8525 CFM), 4.024 cum/s, 0.506 sqm damper		4,870.00
<b>157 400</b>	<b>ACCESSORIES</b>		
<b>157 401</b>	<b>AIR FILTERS</b>		
157 401-1190	Chemical media filter, industrial air fume & odor scrubber unit with pump & motor corrosion resistant, PVC construction, single pack, horizontal 12000 CFM	EA	123,764.00
157 401-1370	Chemical media filter, industrial air fume & odor scrubber unit with pump & motor corrosion resistant, PVC construction, double pack, horizontal 12000 CFM		137,561.00
157 401-1410	Chemical media filter, industrial air fume & odor scrubber unit with pump & motor corrosion resistant, PVC construction, double pack, horizontal 30000 CFM		342,523.00



## DIVISION 15 : MECHANICAL

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
157 401-1600	Chemical media filter, industrial air fume & odor scrubber unit with pump & motor corrosion resistant, PVC construction, single pack, horizontal 24000 CFM		247,529.00
157 401-2150	Air filter, Electronic air cleaner, self-contained, 0.236 cum/s, 1000 CFM		69,900.00
157 401-2250	Air filter, Electronic air cleaner, self-contained, 0.566 cum/s, 2000 CFM	↓	94,000.00
<b>157 450</b>	<b>DIFFUSERS ; Aluminum, w/ opposed blade damper &amp; plenum box,</b>		
157 450-0500	Linear Diffuser, ceiling, with perforated plenum box, one slot ( 3/4" ).	LM	425.00
157 450-0520	Linear Diffuser, ceiling, with perforated plenum box, two slots ( 3/4" ).		585.00
157 450-0540	Linear Diffuser, ceiling, with perforated plenum box, three slots ( 3/4" ).		750.00
157 450-0560	Linear Diffuser, ceiling, with perforated plenum box, four slots ( 3/4" ).		915.00
157 450-0600	Linear Diffuser, ceiling, with perforated plenum box, five slots ( 3/4" ).	↓	1,080.00
157 450-1000	Diffuser, rectangular, 1 to 4 way blow, 150 mm x 300 mm	EA	265.00
157 450-1100	Diffuser, rectangular, 1 to 4 way blow, 300 mm x 600 mm		385.00
157 450-1160	Diffuser, rectangular, 1 to 4 way blow, 450 mm x 600 mm		415.00
157 450-1500	Diffuser, round, butterfly damper, 150 mm diameter (6")		250.00
157 450-1560	Diffuser, round, butterfly damper, 300 mm diameter (12")		370.00
157 450-1570	Diffuser, Square , ceiling, 300 mm X 300 mm .		325.00
157 450-1580	Diffuser, Square , ceiling, 450 mm X 450 mm .		465.00
157 450-1590	Diffuser, Square , ceiling, 600 mm X 600 mm .	↓	650.00
<b>157 460</b>	<b>GRILLES ;</b>		
157 460-1080	Grille, aluminum, for return air, 200 mm x 500 mm	EA	145.00
157 460-1280	Grille, aluminum, for return air, 250 mm x 500 mm		175.00
157 460-1080	Grille, aluminum, for supply air, with damper & plen. box, 200 mm x 500 mm		315.00
157 460-1280	Grille, aluminum, for supply air, with damper & plen. box, 250 mm x 500 mm	↓	360.00
<b>157 470</b>	<b>REGISTERS</b>		
157 470-1020	Register, for supply air, opposing blade damper, anodized aluminum one or two way deflection, adj. curved face bars, w/ plen.box, 150 mm x 500 mm	EA	380.00
157 470-1030	Register, for supply air, opposing blade damper, anodized aluminum one or two way deflection, adj. curved face bars, w/ plen.box, 200 mm x 500 mm		460.00
157 470-1240	Register, for return air, anodized aluminum 150 mm x 500 mm		175.00
157 470-1350	Register, for return air, anodized aluminum 200 mm x 500 mm	↓	215.00
<b>157 480</b>	<b>DUCT ACCESSORIES</b>		
157 480-0050	Duct accessories, air extractors, 300 mm x 100 mm	EA	170.00
157 480-0200	Duct accessories, air extractors, 508 mm x 200 mm		215.00
157 480-0280	Duct accessories, access door, insulated, 300 mm x 300 mm		95.00
157 480-3240	Duct accessories, fire damper, curtain type, vertical, 406 mm x 356 mm		220.00
157 480-3400	Duct accessories, fire damper, curtain type, vertical, 610 mm x 508 mm		305.00
157 480-6000	Duct accessories, multi-blade dampers, opposed blade, 300 mm x 300 mm		182.00
157 480-6080	Duct accessories, multi-blade dampers, opposed blade, 610 mm x 610 mm		308.00
157 480-6180	Duct accessories, multi-blade dampers, opposed blade, 1219 mm x 1219 mm		555.00
157 480-7060	Duct accessories, splitter damper assembly, self-locking, 1830 mm rod		165.00
157 480-8200	Duct accessories, multi-blade dampers, parallel blade, 610 mm x 400 mm	↓	245.00
<b>157 482</b>	<b>LOUVERS</b>		
157 482-2020	Sand trap louvers, aluminum, extruded, with screen, mill finish, w/ 1" thick. aluminum filter, size : 500 mm X 500 mm .	EA	430.00

**DIVISION 15 : MECHANICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT (SR)
157 482-3000	Sand trap louvers, aluminum, extruded, with screen, mill finish, w/ 1" thick. aluminum filter, size : 750 mm X 750 mm .	EA	640.00
<b>157 600</b>	<b>MISCELLANEOUS</b>		
<b>157 610</b>	<b>DUST COLLECTION SYSTEM</b>		
157 610-0220	Dust collection system, commercial/industrial, central vacuum units included stand, filters and motorized shaker, 3500 RPM, 15 HP, 2500 CFM to 5000 CFM	EA	68,500.00
157 610-0230	Dust collection system, commercial/industrial, central vacuum units included stand, filters and motorized shaker, 3600 RPM, 10 HP, 2000 CFM to 3600 CFM	EA	49,750.00
157 610-1160	Dust collection system, vacuum tubing, galvanized 150 mm OD, 14 ga.	LM	142.00
157 610-1190	Dust collection system, vacuum tubing, galvanized 300 mm OD, 12 ga.	LM	400.00
157 610-1980	Vacuum, hose, flexible wire reinforced rubber 150 mm dia.	LM	75.00
157 610-2170	Vacuum tubing 90/45 degree elbow size 150 mm dia.	EA	245.00
157 610-3530	Vacuum tubing compression coupling, galvanized, neoprene gasket size 152 mm dia.	EA	82.00
157 610-3850	Vacuum tubing air gate valve, galvanized, neoprene gasket size 152 mm dia.	EA	590.00





# Division 16

## Electrical

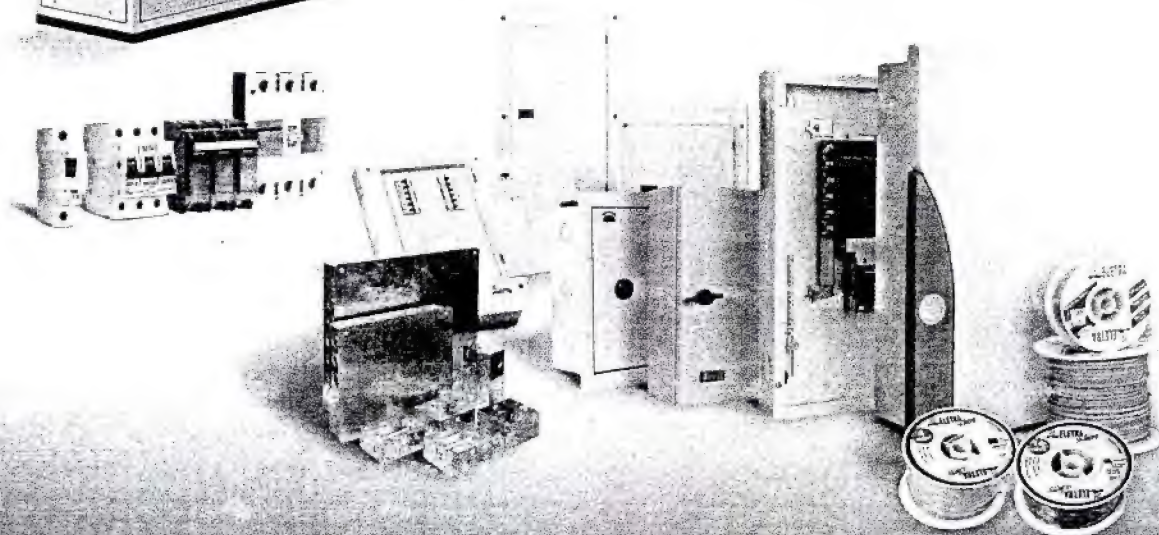
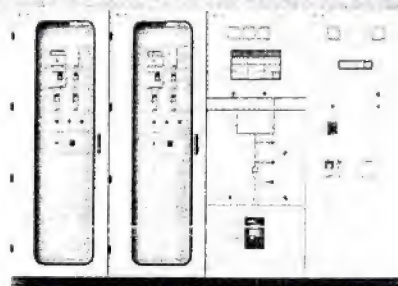
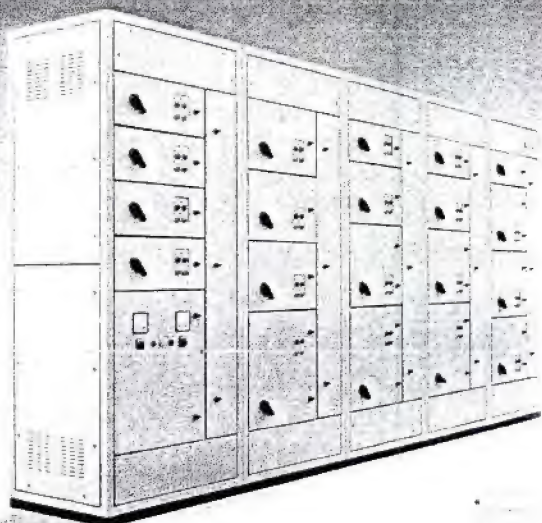




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## DIVISION 16 : ELECTRICAL

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT
<b>160</b>	<b>RACEWAYS</b>		
<b>160 100</b>	<b>CABLE TRAYS</b>		
<b>160 105</b>	<b>CABLE TRAY LADDER:</b>		
160 105-0200	Cable tray ladder, galv. steel, 100 mm deep, 100 mm rung spacing, 300 mm wide	LM	80.00
160 105-0600	Cable tray ladder, galv. steel, 100 mm deep, 100 mm rung spacing, 600 mm wide	"	97.00
<b>160 110</b>	<b>CABLE TRAY SOLID:</b>		
160 110-0160	Cable tray solid, galv. steel, 50 mm deep 150 mm wide		27.00
160 110-0170	Cable tray solid, galv. steel, 100 mm deep 150 mm wide	LM	37.00
160 110-0180	Cable tray solid, galv. steel, 110 mm deep 600 mm wide		113.00
160 110-0200	Cable tray solid, galv. steel, 150 mm deep, 300 mm wide		81.00
160 110-0600	Cable tray solid, galv. steel, 150 mm deep, 600 mm wide	↓	120.00
<b>160 115</b>	<b>CABLE TRAY ACCESSORIES:</b>		
160 115-0100	Cable tray, ladder, elbow 300 mm wide	EA	68.00
160 115-0200	Cable tray, ladder, elbow 600 mm wide		83.00
160 115-0300	Cable tray, solid, elbow 150 mm wide		23.00
160 115-0310	Cable tray, solid, elbow 300 mm wide		69.00
160 115-0400	Cable tray, ladder, elbow 600 mm wide	↓	123.00
<b>160 150</b>	<b>WIREWAY:</b>		
160 150-0200	Wireway screw cover with fittings and supports, 64 mm x 64 mm	EA	58.00
160 150-0200	Wireway screw cover with fittings and supports, 100 mm x 100 mm	"	86.00
<b>160 200</b>	<b>CONDUITS</b>		
<b>160 205</b>	<b>CONDUIT:</b>		
160 205-0700	Conduit <b>Aluminium</b> , 25 mm diameter ( 1")	LM	16.33
160 205-1770	Conduit <b>Galv. Rigid Steel</b> , 20 mm diameter ( 3/4")		10.65
160 205-1800	Conduit <b>Galv. Rigid Steel</b> , 25 mm diameter ( 1")		14.93
160 205-1850	Conduit <b>Galv. Rigid Steel</b> , 38 mm diameter ( 1-1/2")		24.25
160 205-1870	Conduit <b>Galv. Rigid Steel</b> , 50 mm diameter ( 2")		32.49
160 205-1970	Conduit <b>Galv. Rigid Steel</b> , 100 mm diameter ( 4")		93.72
160 205-2500	Conduit <b>Intermediate Steel (IMC)</b> , 15 mm diameter ( 1/2")		2.50
160 205-2550	Conduit <b>Intermediate Steel (IMC)</b> , 25 mm diameter ( 1")		3.66
160 205-2630	Conduit <b>Intermediate Steel (IMC)</b> , 50 mm diameter ( 2")		4.50
160 205-5000	Conduit <b>Electric Metallic Tubing (EMT)</b> , 15 mm diameter ( 1/2")		4.50
160 205-5200	Conduit <b>Electric Metallic Tubing (EMT)</b> , 20 mm diameter ( 3/4")		6.79
160 205-5040	Conduit <b>Electric Metallic Tubing (EMT)</b> , 25 mm diameter ( 1")		9.70
160 205-5100	Conduit <b>Electric Metallic Tubing (EMT)</b> , 50 mm diameter ( 2")		22.31
160 205-6000	Conduit <b>PVC Sch 40</b> ; 20x1.8mm diameter (3/4")		2.66
160 205-6100	Conduit <b>PVC Sch 40</b> ; 32x1.8mm diameter (1-1/4")		5.35
160 205-6200	Conduit <b>PVC Sch 40</b> ; 40x1.9mm diameter (1-1/2")		6.35
160 205-6300	Conduit <b>PVC Sch 40</b> ; 50x1.8mm diameter (2")		8.52
160 205-6400	Conduit <b>PVC Sch 40</b> ; 63x1.9mm diameter (2-1/2")		12.62
160 205-6500	Conduit <b>PVC Sch 40</b> ; 150x11.9mm diameter (6")	↓	42.15
160 205-7000	Conduit <b>Flexible, steel</b> , size 15 mm (100 ft/Roll)	ROLL	108.70
160 205-7100	Conduit <b>Flexible, steel</b> , size 20 mm (100 ft/roll)		136.53
160 205-7400	Conduit <b>Flexible, steel</b> , size 38 mm (25 ft/roll)		171.61
160 205-7500	Conduit <b>Flexible, steel</b> , size 50 mm (25 ft/roll)	↓	212.82
<b>160 500</b>	<b>DUCTS</b>		
<b>160 540</b>	<b>TRENCH DUCT:</b>		
160 540-1000	Trench duct, steel with cover adjustable depths to 100mm, straight, single compartment, 900 mm wide	EA	212.00
160 540-2400	Trench duct fitting; horizontal or vertical <b>Elbow</b> , 900 mm wide		506.00
160 540-3900	Trench duct; <b>Cross fitting</b> , 900 mm wide	↓	387.00
160 540-5100	Trench duct fitting; <b>End closure</b> , 900 mm wide	LM	95.00
160 540-7000	Trench duct fitting; <b>Tee</b> connection, 900 mm wide		387.00
160 540-8200	Trench duct fitting; <b>Riser &amp; cabinet connector</b> , 900 mm wide		150.00



## DIVISION 16 : ELECTRICAL

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT
160 540-8400	Trench duct fitting; <b>Insert assembly</b> ,cell to conduit adapter, 32 mm	↓	50.00
<b>160 560</b>	<b>UNDERFLOOR DUCT:</b>		
160 560-0400	Floor trunking 35 mm x 80 mm with 35 mm inserts at 600 mm O.C.	LM	75.00
160 560-0600	Floor trunking 35 mm x 180 mm ,super duct with 22 mm or 35 mm inserts at 600 mm O.C.	"	150.00
160 560-0800	Floor trunking fittings; <b>Junction box</b> ,single duct, 1 level, 80 mm	EA	250.00
160 560-1000	Floor trunking fittings; <b>Junction box</b> ,single duct, 1 level, 180 mm		350.00
160 560-1200	Floor trunking fittings; <b>Junction box</b> , 2 duct, 1 level, 80 mm		250.00
160 560-1800	Floor trunking fittings; <b>Insert to conduit adapter</b> , 19 mm & 25 mm		250.00
160 560-2000	Floor trunking fitting; <b>Support</b> ,single cell 80 mm wide		50.00
160 560-2800	Floor trunking fitting; <b>Vertical Elbow</b> ,standard duct 80 mm		75.00
160 560-3000	Floor trunking fitting; <b>Vertical Elbow</b> ,super duct 180 mm		175.00
160 560-3200	Floor trunking fitting; Cabinet connector,standard duct 80 mm		25.00
160 560-3400	Floor trunking fitting; Cabinet connector,super duct 180 mm		75.00
160 560-3600	Floor trunking fitting; <b>Conduit adapter</b> ,25 mm to 32 mm		50.00
160 560-4000	Floor trunking fitting; Low tension Outlet,(telephone,computer,etc.)		37.00
160 560-4200	Floor trunking fittings: Receptacle outlet	↓	65.00

## 161 CONDUCTORS & GROUNDING

### 161 100 CONDUCTORS

#### 161 105 ARMORED CABLE:

161 105 0050	<b>1KV wire</b> armoured cable,PVC insulated & PVC sheath(jacket); <b>copper</b> ; 4 x 6 mm2	LM	15.50
161 105-0100	<b>0.6/1 KV</b> , multi core cable, stranded copper conductor, XLPE insulated, <b>steel wire</b> armoured and PVC sheathed, 4 x 16 mm2		36.00
161 105-0200	<b>0.6/1 KV</b> , multi core cable, stranded copper conductor, XLPE insulated, <b>steel wire</b> armoured and PVC sheathed, 3 x 25 + 16 mm		38.00
161 105-0300	<b>0.6/1 KV</b> , multi core cable, stranded copper conductor, XLPE insulated, <b>steel wire</b> armoured and PVC sheathed, 3 x 70 + 35 mm		108.00
161 105-0500	<b>0.6/1 KV</b> , multi core cable, stranded copper conductor, XLPE insulated, <b>steel wire</b> armoured and PVC sheathed, 3 x 185 + 95 mm		260.00
161 105-0600	<b>0.6/1 KV</b> , multi core cable, stranded copper conductor, XLPE insulated, <b>steel wire</b> armoured and PVC sheathed, 3 x 300 + 150 mm		370.00
161 105-2100	<b>0.6/1 KV</b> , multi core cable, stranded copper conductor, XLPE insulated, <b>steel wire</b> armoured and PVC sheathed, 3 x 150 + 70 mm		205.00
161 105-2300	<b>0.6/1 KV</b> , multi core cable, stranded copper conductor, XLPE insulated, <b>steel wire</b> armoured and PVC sheathed, 3 x 240 + 120 mm		330.00
161 105-5000	<b>8.7/15 KV</b> , 3 core cable, stranded compacted copper conductor, XLPE insulated, extruded bonded semicon + copper tape screened, <b>steel wire</b> armoured PVC sheathed, 3 x 25 mm2		90.00
161 105-5150	<b>8.7/15 KV</b> , 3 core cable, stranded compacted copper conductor, XLPE insulated, extruded bonded semicon + copper tape screened, <b>steel wire</b> armoured PVC sheathed, 3 x 95 mm2		207.00
161 105-5300	<b>8.7/15 KV</b> , 3 core cable, stranded compacted copper conductor, XLPE insulated, extruded bonded semicon + copper tape screened, <b>steel wire</b> armoured PVC sheathed, 3 x 185 mm2		328.00
161 105-5350	<b>8.7/15 KV</b> , 3 core cable, stranded compacted copper conductor, XLPE insulated, extruded bonded semicon + copper tape screened, <b>steel wire</b> armoured PVC sheathed, 3 x 240 mm2		414.00
161 105-5400	<b>8.7/15 KV</b> , 3 core cable, stranded compacted copper conductor, XLPE insulated, extruded bonded semicon + copper tape screened, <b>steel wire</b> armoured PVC sheathed, 3 x 300 mm2		460.00
161 105-7200	<b>8.7/15 KV</b> , 3 core cable, stranded compacted copper conductor, XLPE insulated, extruded strippable semicon + copper wire screened, <b>DST</b> armoured PVC sheathed, 3 x 95mm2		190.00
161 105-7750	<b>8.7/15 KV</b> , 3 core cable, stranded compacted <b>copper</b> conductor, XLPE insulated, extruded strippable semicon + copper wire screened, <b>DST</b> armoured PVC sheathed, 3 x 300 mm2	↓	430.00

#### 161 135 CONTROL CABLE:



## DIVISION 16 : ELECTRICAL

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT
161 135-0100	1 KV control cable, 1.5 mm <sup>2</sup> , PVC jacket; 2 wires	LM	7.80
161 135-0200	1 KV control cable, 1.5 mm <sup>2</sup> , PVC jacket; 6 wires	"	19.20
<b>161 137</b>	<b>FIBER OPTICS:</b>		
161 137-0100	Fiber optic cable, 6 core, not armored	LM	18.00
161 137-0150	Fiber optic cable, 6 core, armored	"	22.00
161 137-0200	Fiber optic cable connector	EA	37.00
<b>161 140</b>	<b>MINERAL INSULATED CABLES:</b>		
161 140-0500	1 KV ; mineral insulated, metal sheathed, cable, copper; 1 x 25 mm <sup>2</sup> , 250°C	LM	12.60
161 140-0600	1 KV ; mineral insulated, metal sheathed, cable, copper; 1 x 50 mm <sup>2</sup> , 250°C		23.00
161 140-0700	1 KV; mineral insulated, metal sheathed, cable, copper, 1 x 95mm <sup>2</sup> , 250/ C	↓	48.60
<b>161 145</b>	<b>NON- ARMORED CABLE:</b>		
161 145-0120	0.6/1 KV, single & multi core cable stranded copper conductor, XLPE insulated PVC sheathed, 2 x 1.5 mm <sup>2</sup>	LM	7.80
161 145-0300	0.6/1 KV, single & multi core cable stranded copper conductor, XLPE insulated PVC sheathed, 6 x 1.5 mm <sup>2</sup>		19.20
161 145-0380	0.6/1 KV, single & multi core cable stranded copper conductor, XLPE insulated PVC sheathed, 4 x 16 mm <sup>2</sup>		31.00
161 145-0500	0.6/1 KV, single & multi core cable stranded copper conductor, XLPE insulated PVC sheathed, 3 x 95 + 50 mm		132.00
161 145-0940	0.6/1 KV, single & multi core cable stranded copper conductor, XLPE insulated PVC sheathed, 3 x 150 + 70 mm		205.00
161 145-1100	0.6/1 KV, single & multi core cable stranded copper conductor, XLPE insulated PVC sheathed, 3 x 300 + 150 mm		417.00
161 145-1180	0.6/1 KV, single & multi core cable stranded copper conductor, XLPE insulated PVC sheathed, 1 x 70 mm <sup>2</sup>		32.00
161 145-4200	0.6/1 KV, single & multi core cable stranded copper conductor, XLPE insulated PVC sheathed, 1 x 185 mm <sup>2</sup>		68.00
161 145-4500	0.6/1 KV, single & multi core cable stranded copper conductor, XLPE insulated PVC sheathed, 1 x 300 mm <sup>2</sup>		120.00
161 145-4700	0.6/1 KV, single & multi core cable stranded copper conductor, XLPE insulated PVC sheathed, 4 x 25 mm <sup>2</sup>		44.00
161 145-4800	0.6/1 KV, single & multi core cable stranded copper conductor, XLPE insulated PVC sheathed, 4 x 95 mm <sup>2</sup>		155.00
161 145-5500	0.6/1 KV, single & multi core cable stranded copper conductor, XLPE insulated PVC sheathed, 4 x 185 mm <sup>2</sup>		300.00
161 145-5510	0.6/1 KV, single & multi core cable stranded copper conductor, XLPE insulated PVC sheathed, 4 x 240 mm <sup>2</sup>		378.00
161 145-5800	0.6/1 KV, single & multi core cable stranded copper conductor, XLPE insulated PVC sheathed, 4 x 150 mm <sup>2</sup>		232.00
161 145-7200	0.6/1 KV, single & multi core cable stranded copper conductor, XLPE insulated PVC sheathed, 3 x 50 x 25 mm		69.00
161 145-7360	0.6/1 KV, single & multi core cable stranded copper conductor, XLPE insulated PVC sheathed, 3 x 240 x 120 mm		328.00
161 145-7440	0.6/1 KV, single & multi core cable stranded copper conductor, XLPE insulated PVC sheathed, 1 x 25 mm <sup>2</sup>		12.00
161 145-7520	0.6/1 KV, single & multi core cable stranded copper conductor, XLPE insulated PVC sheathed, 1 x 70 mm <sup>2</sup>		32.00
161 145-7840	0.6/1 KV, single & multi core cable stranded copper conductor, XLPE insulated PVC sheathed, 1 x 120 mm <sup>2</sup>		47.00
161 145-7920	0.6/1 KV, single & multi core cable stranded copper conductor, XLPE insulated PVC sheathed, 1 x 185 mm <sup>2</sup>		68.00
161 145-8000	0.6/1 KV, single & multi core cable stranded copper conductor, XLPE insulated PVC sheathed, 1 x 300 mm <sup>2</sup>		120.00
161 145-8080	1 KV cable, XLPE insulated, PVC Sheathed, 90 degree, Copper; 3 x 240+120 mm <sup>2</sup>		328.00
161 145-8120	1 KV cable, XLPE insulated, PVC Sheathed, 90 degree, Copper; 3 x 300+ 150 mm <sup>2</sup>		417.00



## DIVISION 16 : ELECTRICAL

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT
161 145-8280	1 KV cable, XLPE insulated, PVC Sheathed, 90 degree, Copper; 1 x 25 mm <sup>2</sup>	↓	12.00
161 145-8400	1 KV cable, XLPE insulated, PVC Sheathed, 90 degree, Copper; 1 x 70 mm <sup>2</sup>	LM	32.00
161 145-8480	1 KV cable, XLPE insulated, PVC Sheathed, 90 degree, Copper; 1 x 120 mm <sup>2</sup>	LM	47.00
161 145-8560	1 KV cable, XLPE insulated, PVC Sheathed, 90 degree, Copper; 1 x 185 mm <sup>2</sup>		68.00
161 145-8640	1 KV cable, XLPE insulated, PVC Sheathed, 90 degree, Copper; 1 x 300 mm <sup>2</sup>		120.00
161 145-8770	0.6/1 KV, single & multi core cable stranded aluminium conductor, XLPE insulated PVC sheathed, 4 x 95 mm <sup>2</sup>	↓	50.00
161 145-8800	0.6/1 KV, single & multi core cable stranded aluminium conductor, XLPE insulated PVC sheathed, 4 x 240 mm <sup>2</sup>	LM	95.00
161 145-8830	0.6/1 KV, single & multi core cable stranded aluminium conductor, XLPE insulated PVC sheathed, 4 x 70 mm <sup>2</sup>		40.00
161 145-8890	0.6/1 KV, single & multi core cable stranded aluminium conductor, XLPE insulated PVC sheathed, 4 x 150 mm <sup>2</sup>		80.00
161 145-8920	0.6/1 KV, single & multi core cable stranded aluminium conductor, XLPE insulated PVC sheathed, 4 x 300 mm <sup>2</sup>		110.00
161 145-8920	0.6/1 KV, single & multi core cable stranded aluminium conductor, XLPE insulated PVC sheathed, 3 x 95 + 50 mm		45.00
161 145-8920	0.6/1 KV, single & multi core cable stranded aluminium conductor, XLPE insulated PVC sheathed, 3 x 185 + 95 mm		88.00
161 145-9200	0.6/1 KV, single & multi core cable stranded aluminium conductor, XLPE insulated PVC sheathed, 3 x 240 + 120 mm		90.00
161 145-9270	0.6/1 KV, single & multi core cable stranded aluminium conductor, XLPE insulated PVC sheathed, 1 x 50 mm <sup>2</sup>		7.00
161 145-9290	0.6/1 KV, single & multi core cable stranded aluminium conductor, XLPE insulated PVC sheathed, 1 x 300 mm <sup>2</sup>	↓	40.00
<b>161 165</b>	<b>WIRES:</b>		
161 165-0020	450/750 V, single core stranded, copper wires PVC insulated, 1 x 2.5mm <sup>2</sup>	LM	96.00
161 165-0060	450/750 V, single core stranded, copper wires PVC insulated, 1 x 4mm <sup>2</sup>		142.00
161 165-0100	450/750 V, single core stranded, copper wires PVC insulated, 1 x 6mm <sup>2</sup>		209.00
161 165-0140	450/750 V, single core stranded, copper wires PVC insulated, 1 x 10mm <sup>2</sup>		343.00
161 165-0300	600 V, single core stranded, copper conductor, XLPE insulated, 1 x 2.5mm <sup>2</sup>		97.00
161 165-0320	600 V, single core stranded, copper conductor, XLPE insulated, 1 x 4mm <sup>2</sup>		147.00
161 165-0340	600 V, single core stranded, copper conductor, XLPE insulated, 1 x 6mm <sup>2</sup>		215.00
161 165-0360	600 V, single core stranded, copper conductor, XLPE insulated, 1 x 10mm <sup>2</sup>		350.00
161 165-0700	600 V, Copper wire, Heat resistant, Rubber, 4.0mm <sup>2</sup> , 75/C		190.00
161 165-0760	600 V, Copper wire, Heat resistant, Rubber, 10.0mm <sup>2</sup> , 75/C		438.00
161 165-0840	600 V, Copper wire, Heat resistant, Rubber, 4.0mm <sup>2</sup> , 90/C		190.00
161 165-0860	600 V, Copper wire, Heat resistant, Rubber, 6.0mm <sup>2</sup> , 194/C	↓	242.00
<b>161 500</b>	<b>TERMINATIONS</b>		
<b>161 520</b>	<b>CABLE TERMINATIONS:</b>		
161 520-0025	Wire connectors, screw type, 0.75 to 6 mm <sup>2</sup>	EA	0.48
161 520-0040	Wire connectors, screw-on type, insulated, from 2 to 10 mm <sup>2</sup>		0.62
161 520-0100	Terminal lugs, solderless for wires, 6 to 25 mm <sup>2</sup>		1.20
161 520-0375	Terminal lugs, solderless for wires, 240 mm <sup>2</sup>		18.50
161 520-0400	Terminal lugs, solderless for wires, 300 mm <sup>2</sup>		27.80
161 520-2000	Wire termination, 1 hole lug, crimp side, copper or aluminium, 25 mm <sup>2</sup>		2.29
161 520-3000	Wire termination, 1 hole lug, crimp side, copper or aluminium, 95 mm <sup>2</sup>		5.80
161 520-3800	Wire termination, 1 hole lug, crimp side, copper or aluminium, 240 mm <sup>2</sup>		21.00
161 520-3900	Wire termination, 1 hole lug, crimp side, copper or aluminium, 300 mm <sup>2</sup>	↓	31.85
<b>161 522</b>	<b>HIGH VOLTAGE CABLE TERMINATIONS:</b>		



## DIVISION 16 : ELECTRICAL

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT
161 522-0100	15 KV termination, cable 95 mm2 to indoor switchgear or transformer, premolded cone.	EA	368.00
161 522-0500	15 KV termination, cable 185 mm2 to indoor switchgear or transformer, premolded cone.		368.00
161 522-1000	15 KV termination, cable 300 mm2 to indoor switchgear or transformer, premolded cone.	↓	453.00
<b>161 800</b>	<b>GROUNDING</b>		
<b>161 810</b>	<b>GROUNDING:</b>		
161 810-0100	Ground rod, copper clad, 3.0 m long, 20 mm diameter	EA	71.52
161 810-0200	Ground plate, copper 600 x 600 mm		562.00
161 810-0800	Groundwire, bare copper, 95 mm2		24.29
161 810-1000	Groundwire, bare copper, 150 mm2		55.00
161 810-1300	Groundwire, bare copper, 300 mm2		102.00
161 810-2100	Water pipe ground clamps, heavy duty bronze, 32 mm to 50 mm diameter		57.00
161 810-4000	Ground rod Clamp 20 mm to 240 mm2 bare copper conductor	↓	153.75
<b>162</b>	<b>BOXES &amp; WIRING DEVICES</b>		
<b>162 100</b>	<b>BOXES</b>		
<b>162 110</b>	<b>OUTLET BOXES</b>		
162 110-0020	Outlet Box, pressed steel, octagon, 100 mm, 40 mm deep	EA	15.00
162 110-0100	Octagonal box extension cover, 100 mm, 40 mm deep		15.00
162 110-0150	Outlet Box, pressed steel, square, 100 mm, 40 mm deep		15.00
162 110-0160	Outlet Box, pressed steel, square, 100 mm, 54 mm deep		20.00
162 110-0200	Square outlet Box extension 100 mm, 40 mm deep		20.00
162 110-0300	Square outlet Box plaster ring cover 100 mm, 20 mm raise		20.00
162 110-0650	Outlet Box, pressed steel, switch box "utility box" 100 mm x 50 mm, 40 mm deep	↓	20.00
<b>162 130</b>	<b>PULL BOXES &amp; CABINETS:</b>		
162 130-0200	Pull box, sheet metal, NEMA 1, 200 mm x 200 mm, 100 mm deep	EA	200.00
162 130-0400	Pull box, sheet metal, NEMA 1, 400 mm x 500 mm, 200 mm deep		300.00
162 130-0800	Hinged cabinet, sheet metal, NEMA 3R; 300 mm x 400 mm, 150 mm deep.		150.00
162 130-1400	Hinged cabinet, sheet metal, NEMA 1; 600 mm x 900 mm, 200 mm deep.		400.00
162 130-2200	Hinged cabinet, sheet metal, NEMA 3R; 800 mm x 600 mm, 300 mm deep.		250.00
162 130-3050	Box/Cabinets, Cast Iron, surface mounted, NEMA 4, Weatherproof "WP" 150 x 150 mm, 150 mm deep.		700.00
162 130-3400	Box/Cabinets, Cast Iron, surface mounted, NEMA 4, Weatherproof "WP" 600 x 600 mm, 250 mm deep.	↓	1,500.00
<b>162 300</b>	<b>WIRING DEVICES</b>		
<b>162 310</b>	<b>LOW VOLTAGE SWITCHING:</b>		
162 310-3600	Relays, 120 V or 220 V standard	EA	150.00
162 310-4200	Transformer 120 or 220V to 240V	"	673.12
<b>162 320</b>	<b>WIRING DEVICES:</b>		
162 320-0200	Lighting switch, toggle, single pole, 15A	EA	8.23
162 320-0510	Lighting switch, toggle, single pole, 30A		80.24
162 320-0530	Lighting switch, lock handle, single pole, 20A		12.00
162 320-0600	Lighting switch, toggle, 3 Way, 15A		11.69
162 320-0900	Lighting switch, toggle, 4 Way, 15A		37.52
162 320-0900	Lighting switch, toggle, quit type, 1 pole, 2 throw, center off, 15A		15.00
162 320-1650	Dimmer switch, 120V, incandescent, 1 pole, 600 watt		33.61
162 320-1700	Dimmer switch, 120V, incandescent, 3 way, 600 watt		45.61
162 320-2000	Dimmer switch, 120V, incandescent, 1 pole, 1500 watt		138.00
162 320-2130	Dimmer switch, 120V, fluorescent, 1 pole, 1500 watt		138.00
162 320-2160	Explosion proof toggle switch, 1P- 20 A		384.00
162 320-2180	Receptacle, single, 20 A		13.31
162 320-2190	Receptacle, single, 30 A		750.00
162 320-2370	Plug, 30 A		750.00
162 320-2460	Receptacle, duplex, 120 V, grounded, 20 A		6.54
162 320-2480	Receptacle, ground fault interrupting, 15 A		59.33



## DIVISION 16 : ELECTRICAL

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT
162 320-2600	Wall plates, stainless steel, 1 gang		4.17
162 320-3000	Wall plates, stainless steel, 3 gang		28.39
162 320-3110	Wall plates, Plastic, 1 gang		0.79
162 320-3110	Wall plates, Brushed brass, 1 gang		1.00
162 320-3660	Receptacle, duplex, 250 V, grounded, 20 A		23.61
162 320-4160	Receptacle, locking, 250 V, grounded, 20 A		62.75
162 320-4840	Receptacle, waterproof, 250 V, grounded, 20 A	▼	42.82
<b>163 110</b>	<b>MOTOR CONTROL CENTERS:</b>		
163 110-0200	Manufactured structure consisting combination of motor circuit protector & starter full voltage non-reversed "FVNR", with control transformer ; 10 HP size 1; of 300 mm height	EA	2,100.00
163 110-0300	Manufactured structure consisting combination of motor circuit protector & starter full voltage non-reversed "FVNR", with control transformer ; 50 HP size 1; of 610 mm height	▼	5,540.00
<b>163</b>	<b>MOTORS, STARTERS, BOARDS &amp; SWITCHES</b>		
<b>163 100</b>	<b>STARTERS &amp; CONTROLS</b>		
<b>163 130</b>	<b>MOTOR STARTERS &amp; CONTROLS:</b>		
163 130-0100	Magnetic motor starters full voltage non-reversed "FVNR" W/enclosure & heaters, 220V, 5 HP	EA	2,100.00
<b>163 200</b>	<b>BOARDS</b>		
<b>163 205</b>	<b>CIRCUIT BREAKERS (in enclosure):</b>		
163 205-0400	Circuit Breakers in NEMA 1 enclosure; 600V, 3 pole, 100A	EA	570.00
163 205-0700	Circuit Breakers in NEMA 1 enclosure; 600V, 3 pole, 400A	EA	1,990.00
<b>163 240</b>	<b>METER CENTERS:</b>		
163 240-2600	Meter board, fiberglass, rainproof, 3P, 4W, 127/227 V, consisting, Molded case C.B. & meter 100 A	EA	3,352.00
163 240-2602	Meter board, fiberglass, rainproof, 3P, 4W, 127/227 V, consisting, Molded case C.B. & meter 160 A		3,249.00
163 240-2604	Meter board, fiberglass, rainproof, 3P, 4W, 127/227 V, consisting, Molded case C.B. & meter 200 A		3,721.00
163 240-2610	Meter board, fiberglass, rainproof, 3P, 4W, 127/227 V, consisting, main lugs 300 A & 3 each molded case C.B. & meter 100 A	▼	4,863.00
<b>163 245</b>	<b>PANELBOARDS (Commercial use)</b>		
163 245-0250	Panelboard 2 Phase 3 Wire, 100 Amps Main lugs only (M.L.O); 127/220 V, including 18 branches, bolt-on type circuit breakers, 1P-20A	EA	8,290.00
163 245-0350	Panelboard 2 Phase 3 Wire, 225 Amps Main lugs only (M.L.O); 127/220 V, including 24 branches, bolt-on type circuit breakers, 1P-20A		11,211.00
163 245-0750	Panelboard 3 Phase 4 Wire, 100 Amps Main lugs only (M.L.O); 127/220 V, including 24 branches, bolt-on type circuit breakers, 1P-20A		11,058.00
163 245-1000	Panelboard 3 Phase 4 Wire, 225 Amps Main lugs only (M.L.O); 127/220 V, including 42 branches, bolt-on type circuit breakers, 1P-20A		19,370.00
163 245-1250	Panelboard 3 Phase 4 Wire, 100 Amps Main lugs only (M.L.O); 220/380 V, including 12 branches, bolt-on type circuit breakers, 1P-20A		5,890.00
163 245-1350	Panelboard 3 Phase 4 Wire, 225 Amps Main lugs only (M.L.O); 220/380 V, including 24 branches, bolt-on type circuit breakers, 1P-20A		11,365.00
163 245-1750	Panelboard 2 Phase 3 Wire, 100 Amps Main Circuit Breaker; MCCB, 127/220 V, including 24 branches, bolt-on type circuit breakers, 1P-20A		11,561.00
163 245-1800	Panelboard 2 Phase 3 Wire, 225 Amps Main Circuit Breaker; MCCB, 127/220 V, including 30 branches, bolt-on type circuit breakers, 1P-20A		15,229.00
163 245-1950	Panelboard 2 Phase 3 Wire, 400 Amps Main Circuit Breaker; MCCB, 127/220 V, including 42 branches, bolt-on type circuit breakers, 1P-20A		21,814.00
163 245-2000	Panelboard 3 Phase 4 Wire, 100 Amps Main Circuit Breaker; MCCB, 127/220 V, including 24 branches, bolt-on type circuit breakers, 1P-20A	▼	11,638.00
163 245-2200	Panelboard 3 Phase 4 Wire, 225 Amps Main Circuit Breaker; MCCB, 127/220 V, including 32 branches, bolt-on type circuit breakers, 1P-20A	EA	16,202.00



## DIVISION 16 : ELECTRICAL

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT
163 245-2300	Panelboard 3 Phase 4 Wire, 400 Amps Main Circuit Breaker;MCCB, 127/220 V,including 42 branches,bolt-on type circuit breakers, 1P-20A		21,987.00
163 245-2350	Panelboard 3 Phase 4 Wire, 600 Amps Main Circuit Breaker;MCCB, 127/220 V,including 42 branches,bolt-on type circuit breakers, 1P-20A		23,491.00
163 245-2550	Panelboard 3 Phase 4 Wire, 100 Amps Main Circuit Breaker;MCCB, 220/380 V,including 30 branches,bolt-on type circuit breakers, 1P-20A		14,096.00
163 245-2600	Panelboard 3 Phase 4 Wire, 225 Amps Main Circuit Breaker;MCCB, 220/380 V,including 30 branches,bolt-on type circuit breakers, 1P-20A		15,383.00
163 245-2650	Panelboard 3 Phase 4 Wire, 225 Amps Main Circuit Breaker;MCCB, 220/380 V,including 42 branches,bolt-on type circuit breakers, 1P-20A	↓	20,930.00
<b>163 250</b>	<b>PANELBOARD &amp; LOAD CENTER CIRCUIT BREAKERS:</b>		
163 250-0400	Circuit Breaker,bolt-on type,10 000 Amp.Interrupting Capacity,,2 Pole, 15 to 50A	EA	40.00
163 250-0900	Circuit Breaker,bolt-on type,10 000 Amp.Interrupting Capacity, 3 Pole,100A		184.00
163 250-0970	Circuit Breaker,bolt-on type,14 000 Amp.Interrupting Capacity, 1 Pole, 15 to 30A		245.00
163 250-1000	Circuit Breaker,bolt-on type,22 000 Amp.Interrupting Capacity, 2 Pole,70 to 225A		790.00
163 250-1100	Circuit Breaker,bolt-on type,22 000 Amp.Interrupting Capacity, 3 Pole, 70 to 225A	↓	907.00
<b>163 260</b>	<b>SWITCHBOARDS:</b>		
163 260-2000	Switchboard incoming main service section,copper bus bars, including CT's with compartments and Main Air Circuit Breaker drawout Type;127/220 V, 3 Phase 4 Wire, 1000 Amp.	EA	34,200.00
163 260-2300	Switchboard incoming main service section,copper bus bars, including CT's with compartments and Main Air Circuit Breaker drawout Type;127/220 V, 3 Phase 4 Wire, 2000 Amp.	EA	51,568.00
163 260-2500	Switchboard incoming main service section,copper bus bars, including CT's with compartments and Main Air Circuit Breaker drawout Type;127/220 V, 3 Phase 4 Wire, 3000 Amp.	EA	72,335.00
163 260-5000	Switchboard incoming main service section,copper bus bars, including CT's with compartments and Main Molded Case Circuit Breaker (MCCB), 127/220 V, 3 Phase 4 Wire, 1200 Amp.		36,225.00
163 260-5100	Switchboard incoming main service section,copper bus bars, including CT's with compartments and Main Molded Case Circuit Breaker (MCCB), 127/220 V, 3 Phase 4 Wire, 2000 Amp.		51,865.00
163 260-5200	Switchboard incoming main service section,copper bus bars, including CT's with compartments and Main Molded Case Circuit Breaker (MCCB), 127/220 V, 3 Phase 4 Wire, 2500 Amp.	↓	60,720.00
<b>163 264</b>	<b>SWITCHBOARDS,DISTRIBUTION SECTION:</b>		
163 264-0400	Switchboard,distribution section,copper bus bars,without breakers; 127/220 V or 220/380 V, 3 Phase, 4 Wire, 1000 A.	EA	4,062.00
163 264-0600	Switchboard,distribution section,copper bus bars,without breakers; 127/220 V or 220/380 V, 3 Phase, 4 Wire, 1600 A.		4,458.00
163 264-0700	Switchboard,distribution section,copper bus bars,without breakers; 127/220 V or 220/380 V, 3 Phase, 4 Wire, 2000 A.	↓	5,646.00
163 264-0800	Switchboard,distribution section,copper bus bars,without breakers; 127/220 V or 220/380 V, 3 Phase, 4 Wire, 2500 A.	EA	5,844.00
<b>163 266</b>	<b>SWITCHBOARDS,FEEDER SECTION:</b>		
163 266-0280	Circuit breakers frame upto 100A, 3 pole	EA	485.00
163 266-0420	Circuit breakers frame 225 A, 3 pole		1,350.00
163 266-0430	Circuit breakers frame 400 A, 3 pole		2,070.00
163 266-0460	Circuit breakers frame 600 A, 3 pole		2,440.00
163 266-0490	Circuit breakers frame 1200 A, 3 pole		7,910.00
163 266-0600	Fused switch 100/100A, 2 pole	↓	14.00
<b>163 268</b>	<b>SWITCHBOARD INSTRUMENTS:</b>		
163 268-0100	Switchboard instruments 3 phase, 4-wire, AC indicating, ammeter & switch	EA	397.00



## DIVISION 16 : ELECTRICAL

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT
163 268-0200	Switchboard instruments 3 phase, 4-wire, AC indicating, voltmeter & switch	↓	397.00
<b>163 300</b>	<b>SWITCHES</b>		
<b>163 310</b>	<b>CONTACTORS:</b>		
163 310-0200	Lighting contactor, electrically held, 600 V, 3P - 30 A	EA	745.00
163 310-0200	Lighting contactor, electrically held, 600 V, 3P - 100 A	↓	2,811.00
163 310-0200	Lighting contactor, electrically held, 600 V, 3P - 200 A	↓	5,263.00
<b>163 360</b>	<b>SAFETY SWITCHES:</b>		
163 360-0300	Safety switch, general duty, 220 V, 3P-100 A, fused.	EA	300.00
163 360-0500	Safety switch, general duty, 220 V, 3P-400 A, fused.	↓	1,675.00
163 360-0600	Safety switch, general duty, 220 V, 3P-600 A, fused.	↓	8,268.00
163 360-3900	Safety switch, heavy duty, 220 V, 3P-600 A, fused.	↓	11,000.00
<b>163 500</b>	<b>MOTORS:</b>		
<b>163 520</b>	<b>MOTORS:</b>		
163 520-0250	Motors 230, 60 HZ Dripproof, 1800 RPM, 5 HP	EA	2,865.00
163 520-0350	Motors 230, 60 HZ Dripproof, 1800 RPM, 10 HP	"	8,420.00
<b>164</b>	<b>TRANSFORMERS &amp; BUS DUCTS</b>		
<b>164 100</b>	<b>TRANSFORMERS</b>		
<b>164 120</b>	<b>DRY TYPE TRANSFORMER:</b>		
164 120-2190	Dry type transformer, single phase, 220 V Primary 120 V secondary, nonvent, 15 kVA	EA	6,000.00
164 120-2210	Dry type transformer, single phase, 220V Primary 120V secondary, nonvent, 50 kVA	↓	10,000.00
164 120-3100	Dry type transformer, 3 phase, 220/380 V primary, 127/220 V secondary, ventilated, 15 kVA	↓	10,000.00
164 120-4100	Dry type transformer, 3 phase, 220/380 V primary, 127/220 V secondary, ventilated, 150 kVA	↓	25,000.00
164 120-5200	Dry type transformer, 3 phase, 13800 V primary, 127/220 V or 220/380 V secondary, 500 kVA	↓	80,000.00
164 120-5400	Dry type transformer, 3 phase, 13800 V primary, 127/220 V or 220/380 V secondary, 1000 kVA	↓	110,000.00
164 120-5500	Dry type transformer, 3 phase, 13800 V primary, 127/220 V or 220/380 V secondary, 1500 kVA	EA	138,000.00
164 120-5600	Dry type transformer, 3 phase, 13800 V primary, 127/220 V or 220/380 V secondary, 2000 kVA	EA	150,000.00
<b>164 160</b>	<b>OIL FILLED TRANSFORMER:</b>		
164 160-0200	Oil filled transformer pad mounted, Primary: Delta or Star, 13.8 kV, With taps; 127/220 or 220/380V Secondary 3 Phase, 300 KVA	EA	40,000.00
164 160-0300	Oil filled transformer pad mounted, Primary: Delta or Star, 13.8 kV, With taps; 127/220 or 220/380V Secondary 3 Phase, 500 KVA	↓	58,000.00
164 160-0500	Oil filled transformer pad mounted, Primary: Delta or Star, 13.8 kV, With taps; 127/220 or 220/380V Secondary 3 Phase, 1000 KVA	↓	72,000.00
164 160-0700	Oil filled transformer pad mounted, Primary: Delta or Star, 13.8 kV, With taps; 127/220 or 220/380V Secondary 3 Phase, 2000 KVA	↓	110,000.00
<b>164 200</b>	<b>BUS DUCTS/BUSWAYS</b>		
<b>164 220</b>	<b>COPPER BUS DUCT:</b>		
164 220-2510	Copper bus duct plug-in indoor, 3 pole, 4-wire, straight section, 2000A	LM	3,221.68
164 220-2550	Copper bus duct plug-in indoor, 3 pole, 4-wire, straight section, 3000A	↓	4,938.00
164 220-2800	Copper bus duct plug-in outdoor "WP", 3 pole, 4-wire feeder section, 2000A	↓	3,265.36
164 220-3700	Copper bus duct accessories; Elbow, 2000A	↓	748.72
164 220-3850	Copper bus duct accessories; Elbow, 3000A	↓	996.80
164 220-4500	Copper bus duct accessories; End Box, 2000A	↓	2,727.76
164 220-4600	Copper bus duct accessories; End Box, 3000A	↓	4,557.28
164 220-5500	Copper bus duct accessories; Cable tap box, 2000A	↓	3,774.95
164 220-6300	Copper bus duct accessories; Switchboard stub, 2000A	↓	633.92



## DIVISION 16 : ELECTRICAL

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT
164 220-6350	Copper bus duct accessories; Switchboard stub, 3000A		1,021.44
164 220-6950	Copper bus duct accessories; Tee fitting, 2000A		624.96
164 220-7400	Copper bus duct accessories; Plug-in switch, 100A		1,209.04
164 220-8100	Copper bus duct accessories; Plug-in Molded Case Circuit Breaker (MCCB), 70A to 100A.		1,209.04
164 220-8200	Copper bus duct accessories; Plug-in Molded Case Circuit Breaker (MCCB), 150A to 225A.		1,725.92
164 220-8400	Copper bus duct accessories; Plug-in Molded Case Circuit Breaker (MCCB), 500A to 600A.		5,716.48

## 165 POWER SYSTEMS & CAPACITORS

### 165 100 POWER SYSTEMS

#### 165 120 GENERATOR SET:

165 120-2500	Generator set, gas or gasoline operated, includes battery, charger, muffler & transfer switch, daily fuel tank, 3 phase, 4-wire up to 220/380V; Capacity 150KW	EA	111,450.00
165 120-2700	Generator set, gas or gasoline operated, includes battery, charger, muffler & transfer switch, daily fuel tank, 3 phase, 4-wire up to 220/380V; Capacity 300KW		200,250.00
165 120-3000	Generator set, gas or gasoline operated, includes battery, charger, muffler & transfer switch, daily fuel tank, 3 phase, 4-wire up to 220/380V; Capacity 600KW		378,250.00
165 120-3100	Generator set, gas or gasoline operated, includes battery, charger, muffler & transfer switch, daily fuel tank, 3 phase, 4-wire up to 220/380V; Capacity 900KW		623,250.00
165 120-3200	Generator set, gas or gasoline operated, includes battery, charger, muffler & transfer switch, daily fuel tank, 3 phase, 4-wire up to 220/380V; Capacity 1200KW	EA	1,009,250.00

#### 165 125 TRANSFER SWITCHES:

165 125-0200	Automatic transfer switch in NEMA 1 enclosure, 400 A	EA	16,000.00
165 125-0400	Automatic transfer switch in NEMA 1 enclosure, 1000 A		34,000.00
165 125-0600	Automatic transfer switch in NEMA 1 enclosure, 1600 A		39,000.00
165 125-1300	Manual transfer switch in NEMA 1 enclosure, 600 A		20,000.00

### 165 200 CAPACITORS

#### 165 210 CAPACITORS:

165 210-0200	Capacitor indoor, 220V, single Phase, 5.0 KVAR	EA	460.00
165 210-1000	Capacitor indoor, 220V, single Phase 25 KVAR		3,500.00
165 210-1100	Capacitor indoor, 220V, 3 Phase 25 KVAR		5,000.00
165 210-1350	Capacitor indoor, 380V, single Phase 30 KVAR		7,000.00
165 210-1450	Capacitor indoor, 380V, 3 Phase 50 KVAR		10,500.00

## 166 LIGHTING

### 166 100 LIGHTING

#### 166 110 EXIT AND EMERGENCY LIGHTING:

166 110-0080	Exit lighting fixture, ceiling or wall mount, incandescent, single face.	EA	176.00
166 110-0100	Exit lighting fixture, ceiling or wall mount, incandescent, double face.		187.00
166 110-0900	Emergency lighting fixture, self-contained fluorescent lamp pack		908.00

#### 166 115 EXTERIOR FIXTURES:

166 115-0400	Exterior lighting fixture with lamp, floodlight, quartz, 500W, wall mounted	EA	194.00
166 115-0800	Exterior lighting fixture with pack, discharge lamp up to 250 watt.		1,071.00
166 115-1000	Exterior fixture, floodlights with ballast and lamp, pole mounted, pole not included Mercury Vapor, 250W		1,026.00
166 115-1200	Exterior fixture, floodlights with ballast and lamp, pole mounted, pole not included Mercury Vapor, 400W		1,098.00
166 115-1950	Exterior fixture, floodlights with ballast and lamp, pole mounted, pole not included Metal Halide (MH), or High Pressure Sodium (HPS) 175W	EA	696.00
166 115-2000	Exterior fixture, floodlights with ballast and lamp, pole mounted, pole not included Metal Halide (MH), or High Pressure Sodium (HPS) 400W		625.00



## DIVISION 16 : ELECTRICAL

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT
166 115-2720	Exterior fixture, roadway area luminare, low pressure sodium, 400W		749.00
166 115-2725	Exterior fixture, roadway area luminare, Mercury Vapor, 400W		691.00
166 115-3800	Exterior light pole bracket arms, 1 arm, steel		50.00
166 115-4000	Exterior light pole bracket arms, 2 arms, aluminum		70.00
166 115-4800	Exterior light pole, steel, anchor base, 9.0 meter high	↓	1,020.00
166 115-5200	Exterior light pole, steel, anchor base, 12 meter high	EA	1,480.00
166 115-6500	Exterior, bollard light, including mercury fixture 175 watt, lamp, ballast & polycarbonate lens, 1.00 meter high		1,368.00
166 115-7100	Exterior, bollard light, including sodium fixture up to 150 watt, lamp, ballast & polycarbonate lens, 1.00 meter high		1,368.00
166 115-7400	Exterior landscape recessed up-light, including housing, ballast, transformer and reflector, mercury 100 watt.		1,484.00
166 115-7460	Exterior landscape recessed up-light, including housing, ballast, transformer and reflector, Quartz 500 watt	↓	1,484.00
<b>166 130</b>	<b>INTERIOR LIGHTING FIXTURES (ILF)</b>		
166 130-0200	Interior fluorescent fixture recessed mounted, with lens 300 x 1200 mm, 2 x 40 watt	EA	272.00
166 130-0600	Interior fluorescent fixture recessed mounted, with lens 600 x 1200 mm, 4 x 40 watt		406.00
166 130-1100	Interior fluorescent fixture surface mounted, with lens & latched door frame, 300 x 1200 mm, 2 x 40 W		266.00
166 130-1500	Interior fluorescent fixture surface mounted, with lens & latched door frame, 600 x 1200 mm, 4 x 40 W		400.00
166 130-2200	Interior Strip fluorescent fixture, surface mounted, 1200 mm long, 2 x 40 Watt, rapid start.		105.00
166 130-2800	Interior Strip fluorescent fixture, surface mounted, 1200 mm long, 2 x 60 Watt, rapid start.		336.00
166 130-3100	Interior pendent fluorescent fixture, industrial with white porcelain enamel open reflector, 1200 mm long, 2 x 40 Watt rapid start.		192.00
166 130-3470	Interior fluorescent fixture troffer, air handling type, 600 x 1200 mm, 4 x 40 Watt rapid start, complete with 150 mm diameter air connector.		697.00
166 130-3700	Interior Mercury Vapor lighting fixture, integral ballast, ceiling recess mounted, prismatic glass lens, floating door, 600 x 600 mm, 250 W Deluxe white lamp.		1,158.00
166 130-3800	Interior Mercury Vapor lighting fixture, integral ballast, ceiling recess mounted, prismatic glass lens, floating door, 600 x 600 mm, 400 W Deluxe white lamp.		1,158.00
166 130-4000	Interior Mercury Vapor fixture, High bay, Aluminium reflector, integral ballast, 400 W Deluxe white lamp.		666.00
166 130-4450	Indoor incandescent fixture, high hat can, round alzak reflector 100 W		328.00
166 130-4600	Indoor incandescent fixture, square glass lens with metal trim, 100 W		328.00
166 130-4700	Indoor incandescent fixture, square glass lens with metal trim, 200 W		785.00
166 130-4920	Indoor incandescent fixture, ceiling / wall mounted, metal cylinder, 150 W	↓	453.00
166 130-5400	Indoor incandescent fixture, ceiling, surface mounted, opal glass drum, 250 mm, 2 x 60 watt lamp.	EA	504.00
166 130-5500	Indoor incandescent fixture, ceiling, surface mounted, opal glass drum, 300 mm, 4 x 60 watt lamp.		592.00
166 130-6010	Indoor incandescent fixture, vapor tight, ceiling mounted, 200 Watt.		924.00
166 130-6100	Indoor, Vapor tight fluorescent fixture, surface mounted, 1200 mm long, rapid start, 2 x 40Watt.		776.00
166 130-6200	Indoor, Vapor tight Mercury Vapor fixture, integral ballast, surface mounted, 175 Watt.		542.00
166 130-6850	Indoor, Vandalproof fluorescent fixture, surface mounted, 2 x 40 Watt.		216.00
166 130-6860	Indoor, Vandalproof incandescent fixture, surface mounted, 1 x 150 Watt.	↓	111.00



## DIVISION 16 : ELECTRICAL

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT
<b>168 100</b>	<b>SPECIAL SYSTEMS</b>		
<b>168 105</b>	<b>CLOCKS:</b>		
168 110-0080	Clocks, 300mm diameter, single face (12')	EA	600.00
168 110-0100	Clocks, 300mm diameter, double face (12')	"	1,500.00
<b>168 110</b>	<b>CLOCK SYSTEMS:</b>		
168 110-0100	Clock system, master controller	EA	18,000.00
168 110-0105	Master synchronizing programmable clock, microquartz, 230V/50/60Hz w/4- Prog.ch.	EA	11,000.00
<b>168 120</b>	<b>DETECTION SYSTEMS:</b>		
168 120-3600	Detection system, for fire, sprinkler & standpipe alarm, control panel, 4 zone, with charger & batteries.	EA	10,000.00
168 120-4000	Detection system, for fire, sprinkler & standpipe alarm, control panel, 12 zone, with charger & batteries.		15,000.00
168 120-4300	Fire alarm, break glass alarm switch		282.00
168 120-4500	Fire alarm, alarm bell		132.00
168 120-5000	Fire alarm heat detector, rate of rise		125.00
168 120-5200	Fire alarm smoke detector, ceiling type		178.00
168 120-5400	Fire alarm smoke detector, duct type		843.00
168 120-8000	Fire alarm, remote annunciator, 12 zone lamp	↓	2,000.00
<b>168 125</b>	<b>DOORBELL SYSTEM:</b>		
168 125-0100	Doorbell system including transformer, button & signal 150 mm bell	EA	850.00
168 125-0200	Doorbell system including transformer, button & signal buzzer	"	1,100.00
<b>168 145</b>	<b>NURSE CALL SYSTEMS:</b>		
168 145-0100	Nurse Call Systems, single bedside call station	EA	350.00
168 145-0400	Nurse Call Systems, emergency call station		231.00
168 145-0600	Nurse Call Systems, pillow speaker		9,215.00
168 145-1400	Nurse Call Systems, lights, corridor, dome		112.00
168 145-1600	Nurse Call Systems, master control station for 20 stations	↓	2,800.00
<b>168 155</b>	<b>SOUND SYSTEM:</b>		
168 155-0200	Sound system, Microphone	EA	2,000.00
168 155-0400	Sound system, speaker, ceiling or wall		140.00
168 155-0405	Ceiling mounted loud speakers, RMS Power=6W, 3W, 1.5W, 0.75W		101.00
168 155-1200	Sound system antenna, AM/FM		1,524.00
168 155-1400	Sound system volume control		210.00
168 155-1600	Sound system amplifier, 250W		4,000.00
168 155-1605	Power amplifier-RMS Power=360, Max Power=480W		3,474.00
168 155-1800	Sound system cabinets		10,000.00
168 155-2800	Emergency call system, 12 zones, annunciator	↓	3,000.00
<b>168 157</b>	<b>TELEPHONE SYSTEM:</b>		
168 157-0100	Telephone cabinet, indoor 10 pair	EA	120.00
168 157-0120	Telephone cabinet, indoor 25 pair		200.00
168 157-0140	Telephone cabinet, indoor 50 pair		375.00
168 157-0160	Telephone cabinet, indoor 100 pair		580.00
168 157-0180	Telephone cabinet, indoor 200 pair		1,200.00
168 157-0200	Telephone cabinet, outdoor 10 pair		200.00
168 157-0220	Telephone cabinet, outdoor 25 pair		300.00
168 157-0240	Telephone cabinet, outdoor 50 pair		475.00
168 157-0260	Telephone cabinet, outdoor 100 pair		950.00
168 157-0280	Telephone cabinet, outdoor 200 pair	↓	1,600.00
168 157-0500	Telephone cable, 2 pair	LM	296.00
168 157-0520	Telephone cable, 4 pair		486.00
168 157-0540	Telephone cable, 6 pair	↓	762.00
168 157-0560	Telephone cable, 15 pair	LM	736.00
168 157-0580	Telephone cable, 25 pair		2,952.00
168 157-0600	Telephone cable, 50 pair		5,667.00
168 157-0620	Telephone cable, 80 pair		4,140.00
168 157-0640	Telephone cable, 100 pair	↓	10,714.00



**DIVISION 16 : ELECTRICAL**

CSI CODE	ITEM DESCRIPTION	UNIT	COST PER UNIT
<b>168 160</b>	<b>T.V. SYSTEMS:</b>		
168 160-0200	Master TV antenna system,VHF reception, 30 outlets	OUTLET	13,165.00
168 160-0800	Master TV antenna system,VHF& UHF reception & distribution, 12 outlets	"	4,916.00
168 160-2000	Closed circuit TV system, surveillance, one station (camera & monitor)	EA	4,010.00
<b>169</b>	<b>POWER TRANSMISSION &amp; DISTRIBUTION</b>		
<b>169 100</b>	<b>POWER TRANSMISSION &amp; DISTRIBUTION</b>		
<b>169 130</b>	<b>OVERHEAD LINE CONDUCTORS &amp; DEVICES:</b>		
169 130-0150	Conductors,120 mm2	LM	47.00
169 130-0160	Conductors, 300 mm2	LM	120.00



# Metric Units in the Construction Trades

The metric units used in the construction trades are as follows: The terms length includes all linear measurements (That is, length, width, height, thickness, diameter, and circumference).

	Quantity	Unit	Symbol
Surveying	length	kilometer, meter	km, m
	area	square kilometer hectare ( 10 000 m <sup>2</sup> ) square meter	km <sup>2</sup> ha m <sup>2</sup>
	plane angle	degree (non-metric) minute (non-metric) second (non-metric)	° ' "
Excavating	length	meter, millimeter	m, mm
	volume	cubic meter	m <sup>3</sup>
Trucking	distance	kilometer	km
	volume	cubic meter	m <sup>3</sup>
	mass	metric ton (1 000 kg)	t
Paving	length	meter, millimeter	m, mm
	area	square meter	m <sup>2</sup>
Concrete	length	meter, millimeter	m, mm
	area	square meter	m <sup>2</sup>
	volume	cubic meter	m <sup>3</sup>
	temperature	degree celsius	°C
	water capacity	liter (1 000 cm <sup>3</sup> )	L
	mass (weight)	kilogram, gram	kg, g
	cross-sectional area	square millimeter	mm <sup>2</sup>
Masonry	length	meter, millimeter	m, mm
	area	square meter	m <sup>2</sup>
	mortar volume	cubic meter	m <sup>3</sup>
Steel	length	meter, millimeter	m, mm
	mass	metric ton (1 000 kg) kilogram, gram	t kg, g
	pressure / stress	pascal kilopascal megapascal	Pa kPa MPa
Carpentry	length	meter, millimeter	m, mm
Plastering	length	meter, millimeter	m, mm
	area	square meter	m <sup>2</sup>
	water capacity	liter (1 000 cm <sup>3</sup> )	L
Glazing	length	meter, millimeter	m, mm
	area	square meter	m <sup>2</sup>
Painting	length	meter, millimeter	m, mm
	area	square meter	m <sup>2</sup>
	capacity	liter (1 000 cm <sup>3</sup> ) milliliter (cm <sup>3</sup> )	L mL

	Quantity	Unit	Symbol
Roofing	length	meter, millimeter	m, mm
	area	square meter	m <sup>2</sup>
	slope	meter, millimeter	m, mm
Plumbing	length	meter, millimeter	m, mm
	mass	kilogram, gram	kg, g
	capacity	liter (1 000 cm <sup>3</sup> )	L
	pressure	kilopascal	kPa
Drainage	length	meter, millimeter	m, mm
	area	hectare ( 10 000 m <sup>2</sup> ) square meter	ha m <sup>2</sup>
	volume	cubic meter	m <sup>3</sup>
	slope	millimeter/meter	mm/m
HVAC	length	meter, millimeter	m, mm
	volume	cubic meter	m <sup>3</sup>
	capacity	liter (1 000 cm <sup>3</sup> )	L
	airflow	meter/second	m/s
	volume flow	cubic meter/second liter/second	m <sup>3</sup> /s L/s
	temperature	degree Celsius	°C
	force	newton, kilonewton	N, kN
	pressure	kilopascal	kPa
	energy, work	kilojoule, megajoule	kJ, MJ
	rate of heat flow	watt, kilowatt	W, Kw
Electrical	length	meter, millimeter	m, mm
	frequency	hertz	Hz
	power	watt, kilowatt	W, Kw
	energy	megajoule kilowatt hour	MJ kWh
	electric current	ampere	A
	electric potential	volt, kilovolt	V, kV
	resistance	ohm	Ω



# Abbreviations

<b>A</b>	Area Square Feet; Ampere	<b>CD</b>	Grade of Plywood Face & Back	<b>DC</b>	Direct Current
<b>A.C.</b>	Alternating Current	<b>Cefi.</b>	Cement Finisher	<b>Demob.</b>	Demolition
	Air Conditioning	<b>Cem.</b>	Cement	<b>d.f.u.</b>	Drainage Fixture Units
<b>A.C.I.</b>	American Concrete Institute	<b>CF</b>	Hundred Feet	<b>D.H.</b>	Double Hung
<b>Addit.</b>	Additional	<b>C.F.</b>	Cubic Feet	<b>DHW</b>	Domestic Hot Water
<b>A.G.A.</b>	American Gas Association	<b>CFM</b>	Cubic Feet per Minute	<b>Diag.</b>	Diagonal
<b>Agg.</b>	Aggregate	<b>c.g.</b>	Center of Gravity	<b>Diam.</b>	Diameter
<b>A.H.U.</b>	Air Handling Unit	<b>CHW</b>	Chilled Water; Commercial Hot Water	<b>Distrib.</b>	Distribution
<b>Alum.</b>	Aluminum	<b>C.I.</b>	Cast Iron	<b>Dk.</b>	Deck
<b>A</b>	Ampere	<b>C.I.P.</b>	Cast in Place	<b>D.L.</b>	Dead Load, Diesel
<b>Anod.</b>	Anodized	<b>circ.</b>	Circuit	<b>DLH</b>	Deep Long Span Bar
<b>Approx.</b>	Approximate	<b>Clab.</b>	Common Laborer	<b>Do.</b>	Ditto
<b>Apt.</b>	Apartment	<b>C.L.F.</b>	Hundred Linear Feet	<b>Dp.</b>	Depth
<b>A.S.H.R.A.E.</b>	American Society of Heating Refig. & AC Engineers	<b>CLF.</b>	Current Limiting Fuse	<b>D.P.S.T.</b>	Double Pole, Single Throw
<b>A.S.T.M.</b>	American Society for Testing and Materials	<b>cm</b>	Centimeter	<b>Dr.</b>	Driver
<b>Avg.</b>	Average	<b>CMP</b>	Corrugated Metal Pipe	<b>Drink.</b>	Drinking
<b>A.W.G.</b>	American Wire Gauge	<b>C.M.U.</b>	Concrete Masonry Unit	<b>D.S.</b>	Double Strength
<b>Bbl.</b>	Barrel	<b>CN</b>	Change Notice	<b>Dty.</b>	Duty
<b>B. &amp; B.</b>	Balled & Burlapped	<b>Col.</b>	Column	<b>DWV</b>	Drain Waste Vent
<b>B. &amp; S.</b>	Bell and Spigot	<b>CO<sub>2</sub></b>	Carbon Dioxide	<b>DX</b>	Deluxe White, Direct Expansion
<b>B &amp; W.</b>	Black and White	<b>Comb.</b>	Combination	<b>dyn</b>	Dyne
<b>B.C.Y.</b>	Bank Cubic yards	<b>Compr.</b>	Compressor	<b>e</b>	Eccentricity
<b>BE</b>	Bevel End	<b>Conc.</b>	Concrete	<b>E</b>	Equipment Only; East
<b>B.F.</b>	Board Feet	<b>Cont.</b>	Continuous; Continued	<b>Ea.</b>	Each
<b>Bg. cem.</b>	Bag of Cement	<b>Corr.</b>	Corrugated	<b>E.B.</b>	Encased Burial
<b>BHP</b>	Boiler Horsepower	<b>Cos</b>	Cosine	<b>Econ.</b>	Economy
<b>B.I.</b>	Black Iron	<b>Cot</b>	Cotangent	<b>EDP</b>	Electronic Data Processing
<b>Bit.; Bitum.</b>	Bituminous	<b>Cov.</b>	Cover	<b>EIFS</b>	Exterior Insulation Finish System
<b>Bkrs.</b>	Breakers	<b>CPA</b>	Control Point Adjustment	<b>Eq.</b>	Equation
<b>Bldg.</b>	Building	<b>Cplg.</b>	Coupling	<b>Elec.</b>	Electrician; Electrical
<b>Blk.</b>	Block	<b>C.P.M.</b>	Critical Path Method	<b>Elev.</b>	Elevator, Elevating
<b>Bm.</b>	Beam	<b>CPVC</b>	Chlorinated Polyvinyl Chloride	<b>EMT</b>	Electrical Metallic Conduit, Thin Wall Conduit
<b>B.P.M.</b>	Blows per Minute	<b>C.Pr.</b>	Hundred Pair	<b>Eng.</b>	Engine, Engineered
<b>BR</b>	Bedroom	<b>CRC</b>	Cold Rolled Channel	<b>EPDM</b>	Ethylene Propylene Diene Monomer
<b>Brhe.</b>	Bricklayer Helper	<b>Creos.</b>	Creosote	<b>EPS</b>	Expanded Polystyrene
<b>Bric.</b>	Bricklayer	<b>Crpt.</b>	Carpet & Linoleum Layer	<b>Eqhv.</b>	Equipment Operator, Heavy
<b>Brk.</b>	Brick	<b>CRT</b>	Cathode-ray Tube	<b>Eqlt.</b>	Equipment Operator, Light
<b>Brs.</b>	Brass	<b>CS</b>	Carbon Steel	<b>Eqmm.</b>	Equipment Operator, Mater Mechanic
<b>Brz.</b>	Bronze	<b>Csc</b>	Cosecant	<b>Equip.</b>	Equipment
<b>Btr.</b>	Better	<b>C.S.F.</b>	Hundred Square Feet	<b>ERW</b>	Electric Resistance Welded
<b>BTU</b>	British Thermal Unit	<b>CSI</b>	Construction Specifications Institute	<b>Est.</b>	Estimated
<b>BTUH</b>	BTU per Hour	<b>C.T.</b>	Current Transformer	<b>E.W.</b>	Each Way
<b>B.U.R.</b>	Built-up Roofing	<b>CTS</b>	Copper Tube Size	<b>EWT</b>	Entering Water Temperature
<b>Bx</b>	Interlocked Armored Cable	<b>Cu</b>	Copper, Cubic	<b>Excav.</b>	Excavation
<b>c</b>	Conductivity, Copper Sweat	<b>Cu.Ft.</b>	Cubic Feet	<b>Exp.</b>	Expansion, Exposure
<b>C</b>	Hundred; Centigrade	<b>C.W.</b>	Cool White; Cold Water	<b>Ext.</b>	Exterior
<b>C/C</b>	Center to Center	<b>Cwt.</b>	100 Pounds	<b>Extru.</b>	Extrusion
<b>Cab.</b>	Cabinet	<b>C.W.X.</b>	Cool White Deluxe	<b>f.</b>	Fiber Stress
<b>Cair.</b>	Air Tool Laborer	<b>C.Y.</b>	Cubic Yard	<b>F</b>	Fahrenheit; Female; Fill
<b>Calc</b>	Calculated	<b>C.Y./Hr.</b>	Cubic Yard per Hour	<b>Fab.</b>	Fabricated
<b>Cap.</b>	Capacity	<b>Cyl.</b>	Cylinder	<b>FBGS</b>	Fiberglass
<b>Carp.</b>	Carpenter	<b>d</b>	Penny (nail size)	<b>F.C.</b>	Foot Candles
<b>C.B.</b>	Circuit Breaker	<b>D</b>	Deep; Depth; Discharge		
<b>C.C.F.</b>	Hundred Cubic Feet	<b>Dis.; Disch.</b>	Discharge		
<b>cd</b>	Candela	<b>Db.</b>	Decibel		
<b>cd/sf</b>	Candela per Square Foot	<b>DbI.</b>	Double		



# Abbreviations

<b>P.C.</b>	Compressive Stress in Concrete	<b>Hg</b>	Mercury	<b>KW</b>	Kilowatt
<b>F.E.</b>	Front End	<b>HIC</b>	High Interrupting Capacity	<b>KWh</b>	Kilowatt-hour
<b>FEP</b>	Fluorinated Ethylene Propylene; (Teflon)	<b>HM</b>	Hollow Metal	<b>L</b>	Labor Only; Length; Long; Medium Wall Copper Tubing
<b>F.H.A.</b>	Federal Housing Administration	<b>H.O.</b>	High Output	<b>Lab.</b>	Labor
<b>Fig.</b>	Figure	<b>Horiz.</b>	Horizontal	<b>lat</b>	Latitude
<b>Fixt.</b>	Fixture	<b>H.P.</b>	Horsepower; High Pressure	<b>Lath.</b>	Lather
<b>Fl.Oz.</b>	Fluid Ounces	<b>H.P.F.</b>	High Power Factor	<b>Lav.</b>	Lavatory
<b>Flr.</b>	Floor	<b>Hr.</b>	Hour	<b>lb.; #</b>	Pound
<b>F.M.</b>	Frequency Modulation; Factory Mutual	<b>Hrs./Day</b>	Hours per Day	<b>L.B.</b>	Load Bearing; L Conduit Body
<b>Fmg.</b>	Framing	<b>HSC</b>	High Short Circuit	<b>L &amp; E</b>	Labor & Equipment
<b>Fndtn.</b>	Foundation	<b>Ht.</b>	Height	<b>lb./hr.</b>	Pounds per Hour
<b>Fori.</b>	Foreman, Inside	<b>Htg.</b>	Heating	<b>lb./L.F.</b>	Pounds per Linear Foot
<b>Foro.</b>	Foreman, Outside	<b>Htrs.</b>	Heaters	<b>lb/sq.in.</b>	Pound-force per Square Inch
<b>Fount.</b>	Fountain	<b>HVAC</b>	Heating, Ventilation & Air-Conditioning	<b>L.C.L.</b>	Less than Carload Lot
<b>FPM</b>	Feet per Minute	<b>Hvy.</b>	Heavy	<b>Ld.</b>	Load
<b>FPT</b>	Female Pipe Thread	<b>HW</b>	Hot Water	<b>LE</b>	Lead Equivalent
<b>Fr.</b>	Frame	<b>Hyd; Hydr.</b>	Hydraulic	<b>LED</b>	Light Emitting Diode
<b>F.R.</b>	Fire Rating	<b>Hz</b>	Hertz (cycles)	<b>L.F.</b>	Linear Foot
<b>FRK</b>	Foil Reinforced Kraft	<b>I.</b>	Moment of Inertia	<b>Lg.</b>	Long; Length; Large
<b>FRP</b>	Fiberglass Reinforced Plastic	<b>I.C.</b>	Interrupting Capacity	<b>L &amp; H</b>	Light and Heat
<b>FS</b>	Forged Steel	<b>ID</b>	Inside Diameter	<b>LH</b>	Long Span Bar Joist, Labor Hours
<b>Ft.</b>	Foot, Feet	<b>I.F.</b>	Inside Frosted	<b>L.L.</b>	Live Load
<b>Ftng.</b>	Fitting	<b>I.M.C.</b>	Intermediate Metal Conduit	<b>L.L.D.</b>	Lamp Lumen Depreciation
<b>Ftg.</b>	Footing	<b>In.</b>	Inch	<b>lm</b>	Lumen
<b>Ft. Lb.</b>	Foot Pound	<b>Incan.</b>	Incandescent	<b>lm/sf</b>	Lumen per Square Foot
<b>Furn.</b>	Furniture	<b>Incl.</b>	Included, Including	<b>lm/W</b>	Lumen per Watt
<b>FVNR</b>	Full Voltage Non-Reversing	<b>Int.</b>	Interior	<b>L.O.A.</b>	Length Over All
<b>FXM</b>	Female by Male	<b>Inst.</b>	Installation	<b>log</b>	Logarithm
<b>Fy</b>	Minimum Yield Stress of Steel	<b>Insul.</b>	Insulation/Insulated	<b>L.P.</b>	Liquefied Petroleum; Low Pressure
<b>g</b>	Gram	<b>I.P.</b>	Iron Pipe	<b>L.P.F.</b>	Low Power Factor
<b>G</b>	Gauss	<b>I.P.S.</b>	Iron Pipe Size	<b>LR</b>	Long Radius
<b>Ga.</b>	Gauge	<b>I.P.T.</b>	Iron Pipe Threaded	<b>L.S.</b>	Lump Sum
<b>Gal.</b>	Gallon	<b>I.W.</b>	Indirect Waste	<b>Lt.</b>	Light
<b>Gal.</b>	Gallon	<b>J</b>	Joule	<b>Lt.Ga.</b>	Light Gauge
<b>Galv.</b>	Galvanized	<b>K</b>	Thousand; Heavy Wall Copper Tubing	<b>L.T.L.</b>	Less than Truckload Lot
<b>Gen.</b>	General	<b>K.A.H.</b>	Thousand Ampere Hours	<b>Lt. Wt.</b>	Lightweight
<b>G.F.I.</b>	Ground Fault Interrupter	<b>KCMIL</b>	Thousand Circular Mils	<b>L.V.</b>	Low Voltage
<b>Glaz.</b>	Glazier	<b>K.D.A.T.</b>	Kiln Dried After Treatment	<b>M</b>	Thousand; Material; Male; Light Wall Copper Tubing
<b>GPD</b>	Gallons per Day	<b>kg</b>	Kilogram	<b>m/hr; M.H.</b>	Man-hour
<b>GPH</b>	Gallons per Hour	<b>kG</b>	Kilogauss	<b>mA</b>	Milliampere
<b>GPM</b>	Gallons per Minute	<b>kgf</b>	Kilogram Force	<b>Mach.</b>	Machine
<b>GR</b>	Grade	<b>kHz</b>	Kilohertz	<b>Mag.Str.</b>	Magnetic Starter
<b>Gran.</b>	Granular	<b>Kip.</b>	1000 Pounds	<b>Maint.</b>	Maintenance
<b>Grnd.</b>	Ground	<b>KJ</b>	Kilojoule	<b>Marb.</b>	Marble Setter
<b>H</b>	High; High Strength Joist	<b>K.L.</b>	Effective Length Factor	<b>Mat; Mat'l</b>	Material
<b>H.C.</b>	High Capacity	<b>K.L.F.</b>	Kips per Linear Foot	<b>Max.</b>	Maximum
<b>H.D.</b>	Heavy Duty, High Density	<b>Km</b>	Kilometer	<b>MBF</b>	Thousand Board Feet
<b>H.D.O.</b>	Heavy Duty Overlaid	<b>K.S.F.</b>	Kips per Square Foot	<b>MBH</b>	Thousand BTU's per hour
<b>Hdr.</b>	Header	<b>K.S.I.</b>	Kips per Square Inch	<b>MC</b>	Metal Clad Cable
<b>Hdwe.</b>	Hardware	<b>K.V.</b>	Kilovolt	<b>M.C.F.</b>	Thousand Cubic Feet
<b>Help.</b>	Helpers Average	<b>K.V.A.</b>	Kilovolt Ampere	<b>M.C.F.M.</b>	Thousand Cubic Feet per Minute
<b>HEPA</b>	High Efficiency Particulate Air Filter	<b>K.V.A.R.</b>	Kilovar (Reactance)	<b>M.C.M.</b>	Thousand Circular Mils



# Abbreviations

M.C.P.	Motor Circuit Protector	NEHB	Bolted Circuit Breaker to 600V	Plah.	Plasterer Helper
MD	Medium Duty	N.L.B.	Non-Load-Bearing	Plas.	Plasterer
M.D.O.	Medium Duty Overlaid	NM	Non-Metallic Cable	Pluh.	Plumbers Helper
Med.	Medium	nm	Nanometer	Plum.	Plumber
MF	Thousand Feet	No.	Number	Ply.	Plywood
M.F.B.M.	Thousan Feet Board Measure	NO	Normally Open	p.m.	Post Meridiem
Mfg.	Manufacturing	N.O.C.	Not Otherwise Classified	Pntd.	Printed
Mfrs.	Manufacturers	Nose.	Nosing	Pord.	Painter, Ordinary
mg	Milligram	N.P.T.	Natinal Pipe Thread	pp	Pages
MGD	Million Gallons per Day	NQOD	Combination Plug-on/Bolt on Circuit Breaker to 240V	PP; PPL	Polypropylene
MGPH	Thousand Gallons per Hour	N.R.C.	Noise Reduction Coefficient	P.P.M.	Parts per Million
MH, M.H.	Manhole; Metal Halide; Man-Hour	N.R.S.	Non Rising Stem	Pr.	Pair
MHz	Megahertz	ns	Nanosecond	P.E.S.B.	Pre-Engineered Steel Building
Mi.	Mile	nW	Nanowatt	Prefab.	Prefabricated
MI	Malleable Iron; Mineral Insulated	OB	Opposing Blade	Prefin.	Prefinished
mm	Millimeter	OC	On Center	Prop.	Propelled
Mill.	Millwright	OD	Outside Diameter	PSF; psf	Pounds per Square Foot
Min., min.	Minimum, minute	O.D.	Outside Dimension	PSI; psi	Pounds per Square Inch
Misc.	Miscellaneous	ODS	Overhead Distribution System	PSIG	Pounds per Square Inch Gauge
ml	Milliliter	O.G.	Ogee	PSP	Plastic Sewer Pipe
M.L.F.	Thousand Linear Feet	O.H.	Overhead	Pspr.	Painter, Spray
Mo.	Month	O & P	Overhead & Profit	Psst.	Painter, Structural Steel
Mobil.	Mobilization	Oper.	Operator	P. & T.	Pressure & Temperature
MPH	Miles per Hour	Opng.	Opening	Ptd.	Painted
MPT	Male Pipe Thread	Orna.	Ornament	Ptns.	Partitions
MRT	Mile Round Trip	OSB	Oriented Strand Board	Pu	Ultimate Load
ms	Millisecond	O.S. & Y.	Outside Screw and Yoke	PVC	Polyvinyl Chloride
MSR	Measurement	Ovhd.	Overhead	Pvmt.	Pavement
M.S.F.	Thousand Square Feet	OWG	Oil, Water or Gas	Pwr.	Power
Mstz.	Mosaic & Terrazzo Worker	Oz.	Ounce	Q	Quantity Heat Flow
M.S.Y.	Thousand Square Yard	P.	Pole; Applied Load; Projection	Quan.;	Quantity
Mtd.	Mounted	p.	Page	Qty.; Qty.	
Mthe.	Mosaic & Terrazzo Helper	pape.	Paperhanger	Q.C.	Quick Coupling
Mtngr.	Mounting	P.A.P.R.	Powered Air Purifying Respirator	r	Radius of Gyration
Mult.	Multi; Multiply	PAR	Weatherproof Reflector	R	Resistance
M.V.A.	Million Volt Ampere	Pc., Pcs.	Piece, Pieces	R.C.P.	Reinforced Concrete Pipe
M.V.A.R	Million Volt Amperes	P.C.	Portland Cement; Power Connector	Rect.	Rectangle
MV	Megavolt	P.C.F.	Pounds per Cubic Foot	Reg.	Regular
MW	Megawatt	P.C.M.	Phase Contract Microscopy	Reinf.	Reinforced
MXM	Male by Male	P.E.	Professional Engineer; Porcelain Enamel; Polythylene; Plain End	Req'd	Required
MYD	Thousand Yards	Perf.	Perforated	Res.	Resistant
N	Natural; North	Ph.	Phase	Resi.	Residential
nA	Nanoampere	P.I.	Pressure Injected	Rgh.	Rough
NA	Not Available; Not Applicable	Pile.	Pile Driver	R.H.W.	Rubber, Heat & Water Resistant; Residential Hot Water
N.B.C.	National Building Code	Pkg.	Package	rms	Root Mean Square
NC	Normally Closed	Pl.	Plate	Rnd.	Round
N.E.M.A.	National Electrical Manufacturers Association			Rodm.	Rodman



# Abbreviations

Rofc.	Rofer, Composition	S.T.C.	Sound Transmission Coefficient	U.H.F.	Ultra High Frequency
Rofp.	Rofer, Precast	Std.	Standard	U.L.	Underwriters Laboratory
Rohe.	Rofer Helpers (Composition)	STK	Select Tight Knot	Unfin.	Unfinished
Rots.	Rofer, Tile & Slate	STP	Standard Temperature & Pressure	URD	Underground Residential Distribution
R.O.W.	Right of Way	Stpl.	Steamfitter, Pipefitter	US	United State
RPM	Revolutions per Minute	Str.	Strngth; Starter; Straight	USP	United State Printed
R.R.	Direct Burial Feeder Conduit	Strd.	Stranded	UTP	Unshielded Twisted Pair
R.S.	Rapid Start	Struct.	Structural	V	Volt
Rsr	Riser	Sty.	Story	V.A.	Volt Ampere
RT	Round Trip	Subj.	Subject	V.C.T.	Vinyl Composition Tiles
S	Suction; Single Entrance; South	Subs.	Subcontractors	VAV	Variable Air Volume
SCFM	Standard Cubic Feet per Minute	Surf.	Surface	VC	Veneer Core
Scaf.	Scaffold	Sw.	Switch	Vent.	Ventilation
Sch.;	Schedule	Swbd.	Switchboard	Vert.	Vertical
Sched.		S.Y.	Square Yard	V.F.	Vinyl Faced
S.C.R.	Modular Brick	Syn.	Synthetic	V.G.	Vertical Grain
S.D.	Sound Deadening	S.Y.P.	Souther Yellow Pine	V.H.F.	Very High Frequency
S.D.R.	Standard Dimension Ratio	Sys.	System	VHO	Very High Output
S.E.	Surfaced Edge	t.	Thickness	Vib.	Vibrating
Sel.	Select	T	Temperature; Ton	V.L.F.	Vertical Linear Foot
S.E.R	Service Entrance Cable	Tan	Tangent	Vol.	Volume
S.E.U.	Service Entrance Cable	T.C.	Terra Cotta	VRP	Vinyl Reinforced Polyester
S.F.	Square Foot	T & C	Threaded and Coupled	W	Wire; Watt; Wide; West
S.F.C.A.	Square Foot Contact Area	T.D.	Temperature Difference	w/	With
S.F.G.	Square Foot of Ground	T.E.M.	Transmission Electron Microscopy	W.C.	Water Column; Water Closet
S.F.Hor.	Square Foot Horizontal	TFE	Tetrafluoroethylene (Teflon)	W.F.	Wide Flange
S.F.R.	Square Foot of Radiation	T. & G.	Tongue & Groove; Tar & Gravel	W.G.	Water Gauge
S.F.Shlf.	Square Foot of Shelf	Th.; Thk.	Thick	Wldg.	Welding
S4S	Surface 4 Sides	Thn.	Thin	W. Mile	Wire Mile
Shee.	Sheet Metal Worker	Thrded	Threaded	W-O-L	Weldolet
Sin.	Sine	Tilf.	Tile Layer, Floor	W.R.	Water Resistant
Skwk.	Skilled Worker	Tilh.	Tile Layer, Helper	Wrck.	Wrecker
S.L.	Slimline	THHN	Nylon Jacketed Wire	W.S.P.	Water, Stream, Petroleum
Sldr.	Solder	THW.	Insulated Strand Wire	WT., Wt.	Weight
SLH	Super Long Span Bar Joist	THWN	Nylon Jacketed Wire	WWF	Welded Wire Fabric
S.N.	Solid Neutral	T.L.	Truckload	XFMR	Transformer
S.P.	Static Pressure; Single Pole; Self-Profelled	T.M.	Track Mounted	XHD	Extra Heavy Duty
Spri.	Sprinkler Installer	Tot.	Total	XHHW	Cross-Linked Polyethylene Wire Insulation
S.P.D.T.	Single Pole, Double Throw	T-O-L	Threadolet	Y	Wye
S.P.S.T.	Single Pole, Single Throw	T.S.	Trigger Start	yd	Yard
SPT	Standard Pipe Thread	Tr.	Trade	yr	Year
Sq.	Square; 100 Squire Feet	Transf.	Transformer	Δ	Delta
SQM	Square Meter	Trhv.	Truck Driver, Heavy	%	Percentage
Sq. Hd.	Square Head	Trlr.	Trailer	~	Approximately
Sq. In.	Square Inch	Trit.	Truck Driver, Light	Ø	Phase
SR	Suadi Riyals	TV	Television	@	At
S.S.	Single Strength; Stainless Steel	T.W.	Thermoplastic Water Resistant Wire	#	Pound; Number
S.S.B.	Sigle Strength B Grade	UCI	Uniform Construction Index	<	Less Than
Sswk.	Structural Steel Worker	UF	Underground Feeder	>	Greater Than
Sswl.	Structural Steel Welder	UGND	Underground Feeder		
St.; Stl.	Steel				



## Comments & Suggestions

The Riyadh Chamber of Commerce & Industry is proud to accept any comments and suggestions about this book. Comments and suggestions may be applied in its succeeding edition to enhance the usability, easy accessibility and understanding of this Construction Cost Estimate, please use the format below:

1. Do you have any comments or suggestion on the Divisions of the Cost Index?

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3. Do you find the terminology and abbreviations used in the Cost Index clear and Appropriate?

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General Directorate of Contracors

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## Division Notes.. Labor

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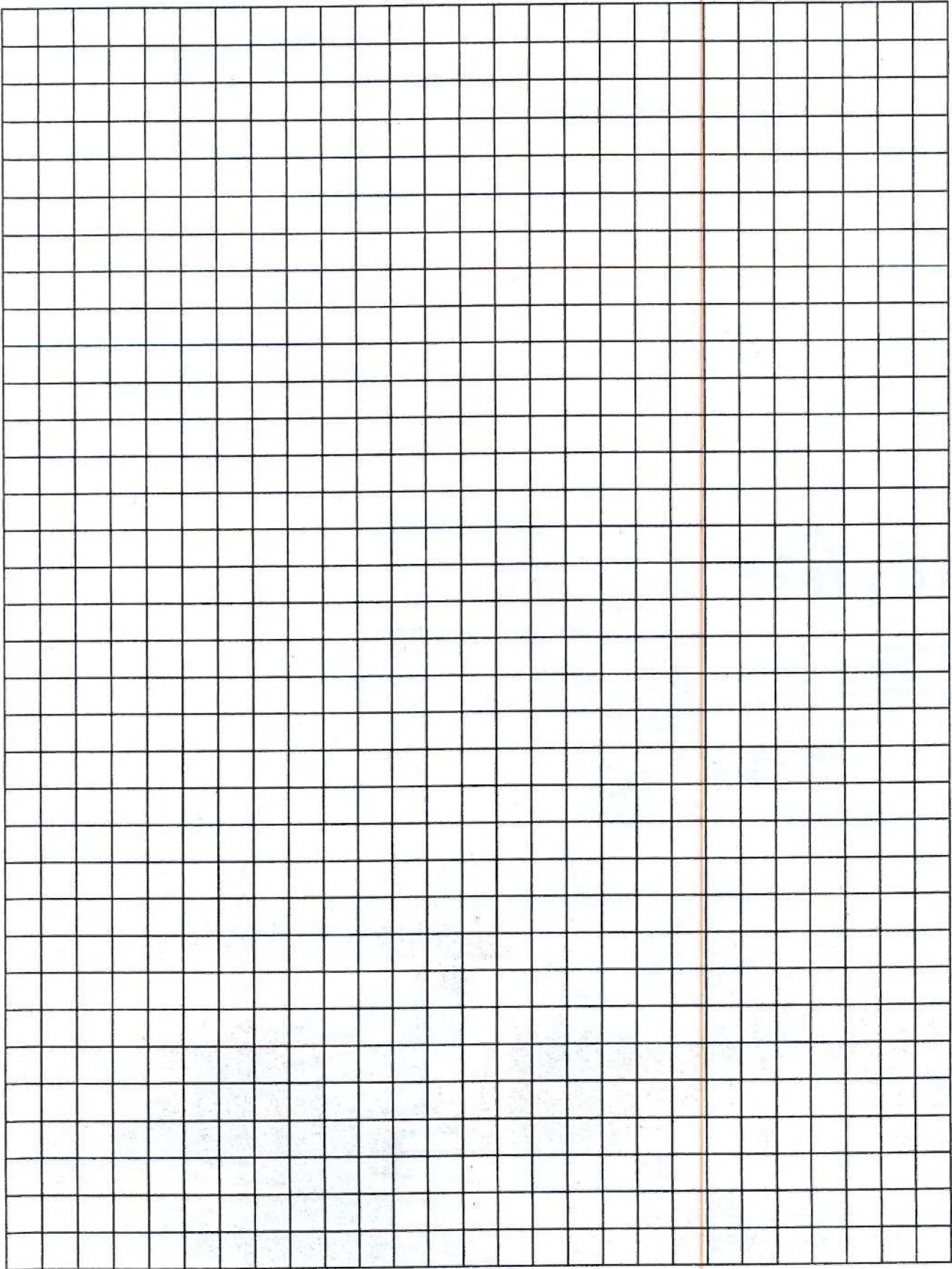


### Division Notes.. Material

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Notes..







## Engineering Consultant **ZAKI M.A.FARSI**

REAL ESTATE DEVELOPMENT DPT

Our engineering office has provided outstanding pieces of work since it began activities in 1977 through the department of Real Estate Development. The Department is engaged in the promotion of projects through a number of studies aimed at meeting needs of those seeking luxurious housing (building) where it designed and promoted Corniche Plaza Building and Farsi Plaza Building as per the latest techniques of architecture and building. Maintaining the privacy of Saudi families. As an extension to this approach Corniche Gardens at Corniche Jeddah is being implemented.



Works of the office also include villas, palaces, residential complexes and exquisite apartments, thus reflecting lovely touches as well as providing luxurious housing requirements.

As an extension to the natural development of the office to cope with architectural arts being witnessed by the Kingdom by establishing big commercial and Administrative centers, the office developed Farsi Center building at Crown Prince Street, Jeddah, in addition to the implementation of medium-sized administrative buildings suitable to shelter trading companies and banks. In general the projects, designed and promoted by our office, have become an outstanding landmarks of construction.



Earning a unique position to have all services in addition to suitability of its areas to needs of Saudi families. In accordance to this principle the Farsi Towers project is being executed at Jeddah's Corniche north of Atallah Park, in which we were able to add a unique element separate from our other projects due to its reliance on luxury standards for a family dwelling place to truly be a residence to those seeking a new style of life.

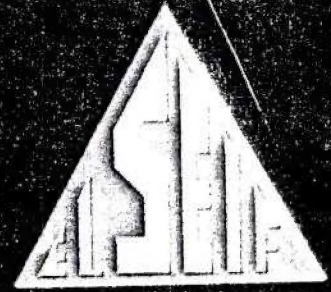
The project units provide a unique panoramic view looking sea and Corniche directly.



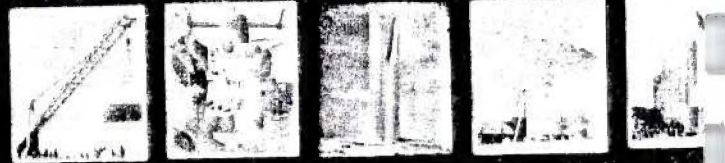








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للمستشفيات . مشاريع تقنية  
مشاريع سكنية . مشاريع عسكرية  
مشاريع تجارية . إدارة مشاريع  
مشاريع تطويرية . مشاريع تطويرية

HELPING TO BUILD A BETTER FUTURE  
HOSPITALS \* TECHNICAL PROJECTS  
RESIDENTIAL CONSTRUCTION  
MILITARY PROJECTS  
COMMERCIAL COMPLEXES  
PROFESSIONAL PROJECT MANAGEMENT  
INTERNATIONAL REPUTATION  
DEVELOPMENT ACTIVITIES

جودة والدقة والنوعية هو هدفنا الذي نسعى إليه

EL SEIF ENGINEERING CONTRACTING

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